JC540 U.S. PTO
11/17/98

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PTO/SB/05 (1/98)
Approved for use through 09/30/2000. OMB 0651-0032
Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE
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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	10005.914C
First Inventor or Application Identifier	SCHREITMUELLER et al.
Title	INSURANCE ESTIMATING SYSTEM
Express Mail Label No.	EL214414127US

JC526 U.S. PTO
09/193780
11/17/98

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231

1. [X] * Fee Transmittal Form *(e.g., PTO/SB/17)* *(Submit an original, and a duplicate for fee processing)*
2. [X] Specification [Total Pages 70] *(preferred arrangement set forth below)*
   including 36 pages Appendix
   - Descriptive title of the invention
   - Cross References to Related Applications
   - Statement Regarding Fed sponsored R & D
   - Reference to Microfiche Appendix
   - Background of the Invention
   - Brief Summary of the Invention
   - Brief Description of the Drawings *(if filed)*
   - Detailed Description
   - Claim(s)
   - Abstract of the Disclosure
3. [X] Drawing(s) *(35 U.S.C. 113)* [Total Sheets 22] Formal
4. Oath or Declaration [Total Pages]
   a. [ ] Newly executed (original or copy)
   b. [X] Copy from a prior application (37 C.F.R. § 1.63(d)) *(for continuation/divisional with Box 17 completed)* *[Note Box 5 below]*
      i. [ ] DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).
5. [X] Incorporation By Reference *(useable if Box 4b is checked)* The entire disclosure of the prior application, from which a copy of the oath or declaration is supplied under Box 4b, is considered to be part of the disclosure of the accompanying application and is hereby incorporated by reference therein.
6. [ ] Microfiche Computer Program *(Appendix)*
7. Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
   a. [ ] Computer Readable Copy
   b. [ ] Paper Copy (identical to computer copy)
   c. [ ] Statement verifying identity of above copies

ACCOMPANYING APPLICATION PARTS

8. [X] Copies of Recorded Assignment Papers (cover sheet & document(s))
9. [ ] 37 C.F.R.§3.73(b) Statement *(when there is an assignee)* [ ] Power of Attorney
10. [ ] English Translation Document *(if applicable)*
11. [X] Information Disclosure Statement (IDS)/PTO-1449 [ ] Copies of IDS Citations
12. [X] Preliminary Amendment
13. [X] Return Receipt Postcard (MPEP 503) *(Should be specifically itemized)*
14. [ ] * Small Entity Statement(s) *(PTO/SB/09-12)* [ ] Statement filed in prior application, Status still proper and desired
15. [ ] Certified Copy of Priority Document(s) *(if foreign priority is claimed)*
16. [X] Other: (1). Suppl. Util. Patent Appln. Trans. (2) EXPRESS MAIL Cert.

* A new statement is required to be entitled to pay small entity fees, except where one has been filed in a prior application and is being relied upon.

17. **If a CONTINUING APPLICATION,** *check appropriate box, and supply the requisite information below and in a preliminary amendment:*
    [X] Continuation [ ] Divisional [ ] Continuation-in-part (CIP) of prior application No: 08/365,520
    Prior application information: Examiner J. Feilds Group / Art Unit: 2776

18. CORRESPONDENCE ADDRESS

[ ] *Customer Number or Bar Code Label* *(Insert Customer No. or Attach bar code label here)* or [ ] *Correspondence address below*

Name	HECKER & HARRIMAN				
Address	1925 Century Park East Suite 2300				
City	Los Angeles	State	CA	Zip Code	90067
Country	U.S.A.	Telephone	(310) 286-0377	Fax	(310) 286-0488

Name (Print/Type)	J. D. Harriman II	Registration No. (Attorney/Agent)	31,967
Signature		Date	11/17/98

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.

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FEE TRANSMITTAL

Patent fees are subject to annual revision on October 1. These are the fees effective October 1, 1997.

Small Entity payments must be supported by a small entity statement, otherwise large entity fees must be paid. See Forms PTO/SB/09-12.

TOTAL AMOUNT OF PAYMENT ($) 966.00

Complete if Known	
Application Number	
Filing Date	
First Named Inventor	SCHREITMUELLER et al.
Examiner Name	J. FEILDS
Group / Art Unit	2776
Attorney Docket No.	10005.914C

METHOD OF PAYMENT (check one)

1. ☐ The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit Account Number

Deposit Account Name

☐ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17

☐ Charge the Issue Fee Set in 37 CFR 1.18 at the Mailing of the Notice of Allowance

2. ☐ **Payment Enclosed:**

☐ Check ☐ Money Order ☐ Other

FEE CALCULATION

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
101	790	201	395	Utility filing fee	$790.00
106	330	206	165	Design filing fee	
107	540	207	270	Plant filing fee	
108	790	208	395	Reissue filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1) ($) 790.00

2. EXTRA CLAIM FEES

		Extra Claims		Fee from below		Fee Paid
Total Claims	28	-20** =	8	X 22	=	$176.00
Independent Claims	3	- 3** =	0	X –	=	–
Multiple Dependent					=	

***or number previously paid, if greater; For Reissues, see below*

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description
103	22	203	11	Claims in excess of 20
102	82	202	41	Independent claims in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	82	209	41	** Reissue independent claims over original patent
110	22	210	11	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) ($) 176.00

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee ($)	Small Entity Fee Code	Small Entity Fee ($)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet.	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	950	217	475	Extension for reply within third month	
118	1,510	218	755	Extension for reply within fourth month	
128	2,060	228	1,030	Extension for reply within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,320	241	660	Petition to revive - unintentional	
142	1,320	242	660	Utility issue fee (or reissue)	
143	450	243	225	Design issue fee	
144	670	244	335	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Petitions related to provisional applications	
126	240	126	240	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	790	246	395	Filing a submission after final rejection (37 CFR 1.129(a))	
149	790	249	395	For each additional invention to be examined (37 CFR 1.129(b))	

Other fee (specify) _____

Other fee (specify) _____

* Reduced by Basic Filing Fee Paid

SUBTOTAL (3) ($) -0-

SUBMITTED BY			Complete (if applicable)	
Typed or Printed Name	J. D. Harriman II		Reg. Number	31,967
Signature		Date 11/17/98	Deposit Account User ID	

Docket No. 10005.914C

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Assistant Commissioner
for Patents
BOX PATENT APPLICATION
Washington, D.C. 20231

SUPPLEMENTAL UTILITY PATENT APPLICATION TRANSMITTAL

Sir:

This is a request for filing a

__X__ Continuation application
____ Divisional application

under 37 CFR 1.53(b), of pending prior application

Serial No. 08/365,520

filed: December 28, 1994

of: James SCHREITMUELLER, Gerhard BLENDSTRUP, Nasser SHARIAPANAHY

for: INSURANCE ESTIMATING SYSTEM

__X__ 1. Please enter the preliminary amendment, enclosed herewith.

____ 2. Please cancel claims _____.

__X__ 3. Please amend the Specification by inserting after the title, the sentence:
--This is a continuation of application Serial No. 08/365,520, filed December 28, 1994.--

__X__ 4. The prior application is assigned to: AUTOMATIC DATA PROCESSING

X 5. The Power of Attorney in the prior application is to:

HECKER & HARRIMAN

X (a) The Power appears in the original papers of the prior application.

___ (b) Since the Power does not appear in the original papers, a copy of the Power in the prior application is enclosed.

X (c) Recognize as associate attorney and address all future communications to:

GARY A. HECKER
HECKER & HARRIMAN
1925 Century Park East, Suite 2300
Los Angeles, CA 90067
(310) 286-0377

X 6. It is hereby requested that any request for a convention priority made in the prior application be transferred to the present application.

___ 7. Applicant hereby petitions for an extension of time of _____ pursuant to Rule 1.136, if one is needed, for the above-noted prior application. A duplicate copy of this sheet is enclosed for filing in the proper application file.

___ 8. The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication, or credit any overpayment, to Deposit Account Number 08-1520. A duplicate of this authorization is enclosed.

Respectfully submitted,

HECKER & HARRIMAN

Date: 11/17/98

By: _____
J. D. HARRIMAN II
Reg. No. 31,967
___Inventor(s)
___Assignee of Complete Interest
X Attorney of Record in prior application.

1925 Century Park East
Suite 2300
Los Angeles, California 90067
(310) 286-0377

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as Express Mail (Label No. EL214414127US in an envelope addressed to: Assistant Commissioner for Patents, BOX PATENT APPLICATION, Washington, D.C. 20231, on:

November 17, 1998

Signature
Mario Federis

Date 11/17/98

10005.914C

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of	)
	)
SCHREITMUELLER Et Al.	)
	)
Serial No: To Be Assigned	)
	)
Filed:	)
	)
For: INSURANCE ESTIMATING SYSTEM	)
	)
A Continuation Application of United States Patent Application No. 08/365,520 Filed on December 28, 1994	)

PRELIMINARY AMENDMENT AND REMARKS

Box PATENT APPLICATION
Assistant Commissioner for Patents
Washington, D.C. 20231

Sirs:

Please amend the present application as follows:

IN THE SPECIFICATION:

After the tile, insert the following sentence: --This is a continuation of application Serial No. 08/365,520, filed December 28, 1994.--

On page 19, line 25, delete "seletect" and replace it with --select--.

On page 19, line 28, delete "overriddent" and replace it with --overridden--.

On page 20, line 24, delete "summery" and replace it with --summary--

IN THE CLAIMS

Please cancel claims 2, 5, 6, 8, 9, 10, 12, 13, and 14, and amend claims 1, 3, 11, and 14, and add new claims 15-37 as follows:

1. (AMENDED) In a computer system, a method for [selecting displaying a subset of a set of connected parts] estimating damage to a vehicle, said method comprising the steps of:

simultaneously displaying a plurality of types of identifiers representing [said set of connected parts] vehicle parts;

selecting a vehicle part by selecting an identifier from said plurality of types of identifiers; and

obtaining an estimate of damage to a vehicle based upon said selected vehicle part.

[displaying said subset of said set in response to said selecting step.]

3. (AMENDED) The method of claim [2] 1 wherein one of said plurality of types of identifiers [comprise] is a textual list[s, graphics icons, and hot spots].

4. (AMENDED) The method of claim 3 wherein said textual list comprises a list of vehicle parts displayed [in a menu] by said computer system.

7. (AMENDED) The method of claim 4 wherein said selecting a vehicle part step comprises the step of selecting a vehicle part from said list of vehicle parts.

11. (AMENDED) The method of claim [10] 1 wherein said vehicle is an automobile.

15. (NEW) The method of claim 1 wherein one of said plurality of types of identifiers is a graphics icon.

16. (NEW) The method of claim 1 wherein one of said plurality of types of identifiers is a hot spot.

17. (NEW) The method of claim 15 wherein said graphics icons comprise images of vehicle parts displayed by a computer system.

18. (NEW) The method of claim 16 wherein each of said hot spots comprises a symbol associated with a vehicle part displayed by said computer system.

19. (NEW) The method of claim 15 wherein said selecting step comprises the step of selecting a graphics icon.

20. (NEW) The method of claim 16 wherein said selecting step comprises the step of selecting a hot spot.

21. (NEW) An article of manufacture comprising:

a computer usable medium having computer readable program code embodied therein for estimating damage to a vehicle, the computer readable program code in said article of manufacture comprising:

computer readable program code configured to cause a computer to simultaneously display a plurality of types of identifiers representing vehicle parts;

computer readable program code configured to cause a computer to allow selection of a vehicle part by selecting an identifier from said plurality of types of identifiers; and

computer readable program code configured to cause a computer to obtain an estimate of damage to a vehicle based upon said selected vehicle part.

22. (NEW) The article of manufacture of claim 21 wherein one of said plurality of types of identifiers is a textual list.

23. (NEW) The article of manufacture of claim 21 wherein one of said plurality of types of identifiers is a graphics icon.

24. (NEW) The article of manufacture of claim 21 wherein one of said plurality of types of identifiers is a hot spot.

25. (NEW) The article of manufacture of claim 22 wherein said program code configured to cause a computer to display a plurality of types of identifiers further comprises computer readable program code configured to cause a computer to display said textual list in a menu.

26. (NEW) The article of manufacture of claim 23 wherein said graphics icons are comprised of images of vehicle parts.

27. (NEW) The article of manufacture of claim 24 wherein each of said hot spots is comprised of a symbol associated with a vehicle part.

28. (NEW) The article of manufacture of claim 25 wherein said textual list comprises a list of vehicle parts.

29. (NEW) The article of manufacture of claim 23 wherein said program code configured to cause a computer to allow selection of a vehicle part by selecting an identifier from said plurality of types of identifiers further comprises computer readable program code configured to cause a computer to allow selection of a graphics icon.

30. (NEW) The article of manufacture of claim 24 wherein said program code configured to cause a computer to allow selection of a vehicle part by selecting an identifier from said plurality of types of identifiers further comprises computer readable program code configured to cause a computer to allow selection of a hot spot.

31. (NEW) The article of manufacture of claim 21 wherein said vehicle is an automobile.

32. (NEW) In a computer system, a method for estimating damage to a vehicle, said method comprising the steps of:

displaying a graphical representation of at least one vehicle part;

associating at least one selection point with said graphical representation of said vehicle part;

selecting said vehicle part by selecting said selection point; and

obtaining an estimate of damage to a vehicle based upon said selected vehicle part.

33. (NEW) The method of claim 32 wherein said vehicle is an automobile.

34. (NEW) The method of claim 32 wherein said selection point is a graphics icon.

35. (NEW) The method of claim 32 wherein said selection point is a hot spot.

36. (NEW) The method of claim 34 wherein said graphics icon comprises an image of a vehicle parts.

37. (NEW) The method of claim 35 wherein said hot spot comprises a symbol associated with said vehicle part.

REMARKS

In the office action dated June 3, 1997, the examiner rejected claims 1, 3, 4, 7, and 11, under 35 U.S.C. § 103 as being unpatentable over Montagna et al. U.S. Pat. 4,899,292 in view of "Mastering Windows 3.1" stating:

> With respect to independent claim 1, Montagna discloses displaying a plurality of identifiers representing vehicle parts (col. 3, line 43 "the system may display a menu for identifying a variety of graphic images corresponding to the damage area.")

and selecting an identifier from said plurality of identifiers (col. 3, line 21 "the second graphic image is selected by means of a touch screen..."). Montagna does not show simultaneously displaying a plurality of types of identifiers. However, using a plurality of types of identifiers is common in the art. Mastering Windows 3.1 displays a plurality of types of identifiers (page 65, figure 2.7). Selection can be made by an graphic icon or by clicking on the text at the top of the window (file, options, window, help). It would have been obvious to a person of ordinary skill in the art at the time of the invention to display a plurality of types of identifiers in Montagna reference since it is commonly used in the art.

Applicant has amended claims 1, 3, 4, 7, and 11 and added several independent claims. Amended independent claim 1, and new independent claims 21 and 32 provide for obtaining an estimate of damage to a vehicle based on the selected vehicle part. Montagna does not provide for the selection of a vehicle part for which an estimate is then based on. Montagna merely provides for displaying graphic images. On column 3, line 21, the "second graphic image is selected by means of a touch screen" merely provides for a further display of graphic images (see col. 3, lines 1-24). Montagna does not teach or suggest obtaining an estimate of damage to a vehicle based on the a selected vehicle part. Further, the Windows reference cited by the examiner does not provide for estimating damage to a vehicle.

CONCLUSION

For the foregoing reasons, Applicant contends that none of the cited references, either alone or in combination, teach, disclose, or suggest the present invention. Thus, Applicant contends that claims 1, 3, 4, 7, 11, and 15-37 are in condition for allowance.

Respectfully submitted,

HECKER & HARRIMAN

Date: 11/17/98

By: _____
J.D. HARRIMAN II
Reg. No. 31,967

1925 Century Park East
Suite 2300
Los Angeles, California 90067
(310) 286-0377

CERTIFICATE OF MAILING

This is to certify that this correspondence is being deposited with the United States Postal Service as Express Mail Label No. EL214414127US in an envelope addressed to Box PATENT APPLICATION, Assistant Commissioner for Patents, Washington, D.C. 20231 on Nov. 17, 1998

Signature: _____ Date 11/17/98
Mario Federis

10005.914

UNITED STATES PATENT APPLICATION

FOR

INSURANCE ESTIMATING SYSTEM

INVENTORS:

JAMES P. SCHREITMUELLER
GERHARD BLENDSTRUP
NASSER SHARIATPANAHY

PREPARED BY:

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BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to an estimating system, and more particularly to a stand alone insurance estimating system, such as one used for automobile accident damage estimating, which can be used by automobile insurance appraisers and repair facilities to obtain information about parts, labor, and repair operations for automobile repairs.

2. Background Art

Computerized insurance estimating systems are known. Such insurance estimating systems provide access to large amounts of parts information, such as parts' prices, availability of economy or OEM parts, labor estimates and parts replacement operations. Furthermore, various systems for storing and retrieving text and associated data and graphics are known. For example, text, menus and graphics have been stored in computer memory and displayed in separate windows on a screen. Controls have also been provided to scroll windows up, down, left, and right to thereby display different portions of text, menus and graphics.

It is known to store text and reference numbers indicating the location of associated graphics in memory. Graphics are displayed integral with the text, that is, portions of pages of the text are devoid of text and filled instead with graphics. Known systems are also capable of enlarging and centering graphics.

In the automobile repair and insurance industries, manuals are used to provide insurance estimators or mechanics with parts availability, repair, and replacement cost, and further with labor time and cost. For example, an insurance estimator views a damaged automobile, and determines either through observation or a parts manual, the parts which are damaged.

Then, the adjuster estimates cost of repair by looking up in various manuals the cost for each of the damaged parts and the specified labor time for repair. This procedure is cumbersome because more than one manual may be required to make the estimations, and after the initial write-up the information may have to be transcribed to another form in order to more easily understand and communicate the information. Moreover, entire manuals need be searched for information. Furthermore, this procedure does not ensure that the estimator notices every damaged part since many small parts comprising larger parts may not be readily visible.

In one known insurance estimation system, an estimator identifies the model of a damaged automobile and then locates in a file cabinet a hard copy multi-worksheet form corresponding to the model. The worksheets include several different views of the model, part numbers, and lines leading from the part numbers to the corresponding parts. The estimator circles the part numbers of the damaged parts and then, a computer operator enters the part numbers in a computer which estimates cost of repair. The identification of many small damaged parts, the searching through all the worksheets, and the entry of part numbers into the computer are all cumbersome and prone to error. Prior art computerized estimation systems work essentially as described above, except that the worksheets are displayed on a computer screen instead of being in hard copy.

Furthermore, to estimate damage to entire exterior sheet metal of automobiles, for example, damage resulting from hail, sand, or flood, prior art systems require the break-up of the exterior sheet metal into individual sections. For example, the exterior sheet metal may be divided into the hood, the rear and front, the fenders, and four doors. Thus, the prior art requires that each section of the exterior sheet metal be separately located on a worksheet or recalled on a computer screen. Then the damage estimate to each section of the exterior sheet metal is performed. This procedure is slow and prone to error because many of small sections comprising the exterior sheet metal may not be noticed.

Montagna et al (U.S. Patent 4,899,292) discloses a system for storing and retrieving text and associated graphics. The system includes a service manual with a document that consists of text describing steps for repairing a vehicle and graphic images for showing damaged portions of a vehicle. The system displays a graphic image of a vehicle, and damaged parts of the vehicle are identified by means of a touch screen. In particular, Montagna et al's system can display a work sheet shown in Figure 13 and graphic images shown in Figures 14 and 15. See column 13, lines 31 through 53. With the aid of the work sheet and the graphic images possible damaged regions of a vehicle can be selected. However, Montagna et al do not teach, disclose or suggest an insurance estimating system that groups vehicle parts in layers of various depth such that an estimator has a systematic and error free way of probing behind the visibly damaged parts to identify damaged parts that are not readily visible. Further, Montagna et al do not teach, disclose or suggest a means to estimate damage to an entire exterior sheet metal of a vehicle without the need to divide the sheet metal into separate sections.

There is need in the art for a simple and error free insurance estimating system for identification of damaged parts and for estimating costs of repair and replacement. Further there is need for an estimating system which guides an estimator through identification of many small and not readily visible damaged parts. There is also need for a systematic and error free way to probe "behind" the visibly damaged parts to identify the not so readily visible damaged parts. There is further need for a way to estimate damage to an entire exterior sheet metal of automobiles without the need to divide the sheet metal into separate sections.

SUMMARY OF THE INVENTION

The present invention is an insurance estimating system that presents a number of advances over the prior art. The invention enables an insurance estimator to quickly and accurately estimate damage to various parts of a vehicle. The invention allows the estimator to analyze damage to various "layers" of a vehicle. If damage to an outer layer of a vehicle is visible, the insurance estimator will quickly perform a damage estimate using the catastrophe or drill in and drill out features of the invention. Nevertheless, the estimator will be reminded to also look for damage in lower layers of the vehicle that are not readily visible. This is because in the insurance estimating system of the invention, vehicle parts are grouped in layers, and the layers are organized in the order of distance from the exterior sheet metal of the vehicle. As the estimator uses the drill in feature of the invention, he or she will be reminded to check for damage in "lower" layers of the vehicle. Conversely, an estimator may begin estimating damage to a vehicle by focusing on the interior of a vehicle which has significant interior damage. The invention then reminds the estimator not to overlook slight damage to outer layers of the vehicle. This is because, as the estimator "drills out of" the interior of the vehicle, he will be reminded to look for damage at outer layers, such as the exterior sheet metal.

The catastrophe feature of the invention permits insurance estimators to quickly and accurately perform a large number of damage estimates when damage is primarily to outer layers of the vehicle, such as damage resulting from hail, sand, or flood. In case of damage from natural phenomena, such as hail, sand, or flood, a large number of vehicles are damaged in a short period of time. By utilizing the catastrophe feature, a large number of vehicles can be processed quickly and accurately in "drive through" insurance estimating centers.

The invention allows an insurance estimator to select a desired vehicle part for repair, replacement, or other operations, in a number of

quick and convenient ways, and gives the estimator a number of options. A vehicle part of interest can be selected for processing by using the vehicle part name in a textual list, the part's graphic icon, or the part's "hot spot." This "multiple selection" feature of the invention further allows an estimator to quickly and accurately estimate damage to vehicles. The invention also prevents "double charging" when there is a possibility that a vehicle part may be selected more than once while using the catastrophe and drill in/out features, or while using the multiple selection feature of the invention. Other features and advantages of the invention will be apparent from the detailed description of the invention and the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 shows the first screen of an application program for the insurance estimating system of the present invention.

Figure 2 shows a screen which is displayed by the application program of the present invention upon selecting the Contents folder.

Figure 3A shows the contents of Administrative page 30.

Figure 3B shows a virtual calendar keyboard invoked by using the loss date line in Administrative page 30.

Figure 3C shows a virtual numeric keyboard invoked by using the agent phone line in Administrative page 30.

Figure 3D shows an example of a completed screen in Administrative folder 30.

Figure 4 shows a screen in Vehicle ID folder for identifying a vehicle prior to estimating damage.

Figure 5A shows a screen in the Damages page of the present invention. This screen is shown in the "split mode."

Figure 5B shows a "mini" list showing only those vehicle subsections that are below a selected main vehicle section.

Figure 5C shows a list displaying some of the options that are available to a user for displaying items of interest.

Figure 5D shows an example of a user selecting display of the graphics section, and deselecting display of the textual list.

Figure 6A shows the main vehicle section of front bumper selected by a user in a "split mode."

Figure 6B shows a screen displayed when the user "drills into" the layer immediately below the front bumper layer, that is the front end panel and lamps layer.

Figure 6C shows a screen displayed when the user "drills into" the layer immediately below the front end panel and lamps layer, that is the radiator support layer.

Figure 6D shows a screen displayed when the user "drills into" the layer immediately below the radiator support layer, that is the cooling and air conditioning layer.

Figure 7 shows the screen displayed when the catastrophe mode of the invention is selected.

Figure 8 shows a sample list of the main vehicle sections and subsections of the present invention.

Figure 9 is a flowchart illustrating how the drill in and catastrophe features of the present invention are implemented.

Figure 10A shows a page of the "Rates/Totals" page.

Figure 10B shows a page of the "Reports" folder.

Figure 10C shows a page of the "Notes" folder.

DETAILED DESCRIPTION OF THE INVENTION

An insurance estimating system is described. In the following description, numerous specific details are set forth in detail in order to provide a more thorough understanding of the present invention. It will be apparent, however, to one skilled in the art, that the present invention may be practiced without these specific details. In other instances, well known features have not been described in detail so as not to obscure the present invention.

Figure 1 shows the first screen of an application program for the insurance estimating system of the present invention. The first screen opened by the application program is screen 100. This screen displays several folder tabs. These are Claims tab 12, Contents tab 14, Estimates tab 16, Reports tab 18, and Notes tab 20. An optional Forms tab (not shown in Figure 1, but shown in some of the Figures, such as Figure 6A) may be shown between Report tab 18 and Notes tab 20. (Clicking on the Forms tab enables the user to utilize various forms in arriving at an insurance damage estimate). When the first screen of the application program is opened, in which the Claims folder is automatically selected. This is shown by the highlighted Claims tab 12. The remaining folders, namely, Contents, Estimates, Reports, and Notes, are parts of the Claims folder. Each of the Contents, Estimates, Reports, or Notes folder tabs can be selected in a manner known in the art, for example by using a keyboard, a cursor and a mouse, or a pen and a touch-sensitive screen. In the preferred embodiment of the present invention, a pen and a touch-sensitive screen is used. Each item which is available for selection by a user is displayed on the touch-sensitive screen. Selection of an item is then accomplished by "clicking" the pen on the touch-sensitive screen, on the item to be selected. For simplicity, the following description of the invention refers to the preferred embodiment using a pen and a touch-sensitive screen.

Screen 100 is divided into several fields. A Claim # field 22 contains the claim number assigned to each claim entered into and processed by the

application program. An Owner field 24 displays the name of the owner of the vehicle for which a claim has been entered. A Vehicle field 26 contains the make and model of the vehicle corresponding to the entered claim. A User field 28 specifies the name of the operator of the vehicle at the time the event giving rise to the claim occurred. A Date field 30 contains the date at which the event giving rise to the claim occurred. The remaining portions of screen 100 are not of interest to the present application.

Figure 2 shows screen 101 which is displayed by the application program of the present invention upon selecting the Contents folder by clicking the pen once on the Contents folder tab 14. The Contents folder provides a "table of contents" for what is stored in each folder for a claim of interest, such as claim 32 shown in screen 101. The Contents folder displays several folders and their respective pages. The first folder is the Estimates folder 16B. The pages within this folder are Original Estimate, Supplement 1, and Supplement 2 as shown in Figure 2. These pages are pages that can also be accessed by selecting Estimates folder tab 16. The second folder shown in screen 101 is Reports folder 18B. This folder corresponds to Reports folder tab 18. The various pages shown under Reports folder 18B, such as the Estimate preview pages, PXN pages, VIN pages, and Summary pages, provide a mechanism for a final review, and possible modification, of a damage estimate prepared by the user. Forms folder 19B contains various insurance estimating forms, such as Check Draft and Loss Report forms, which are not of interest in describing the present invention. Notes folder 20B corresponds to Notes 20 folder tab and contains notes recorded by an insurance estimator with respect to claim 32 shown in screen 101. Each folder shown on screen 101 can be opened either by clicking the pen once on the folder icon displayed on screen 101 (for example, Estimates folder 16B), or by clicking on the corresponding folder tab displayed on top of screen 101 (for example, Estimates tab 16). Further, each page within a folder can be selected by clicking on the page icon shown in screen 101, or alternatively, by selecting the page after the folder is opened.

Clicking the pen once on Estimates tab 16, causes screen 102 shown in Figure 3A to be displayed. Screen 102 shows the contents of Administrative page 30. The remaining pages within the Estimate folder are Vehicle ID page 40, Damages page 50, and Rates/Totals page 60. These pages, as well as Administrative page 30, are identified by labels in the horizontal bar shown near the top portion of screen 102. As shown in Figure 3A, the first page opened and available for inputting data is Administrative page 30. This page is used for inputting and processing information related to a damage claim, inspection report, and other administrative information.

A claim information section 31 contains a claim number line, a policy number line, a loss date line and other lines as shown in Figure 3A. Each line in the claim information section 31 can be filled by using either an actual keyboard (not shown) connected to a computer on which the application program runs, or from a virtual keyboard. The virtual keyboard automatically appears on screen 102 in response to a user selecting a line of information to be completed. Three types of virtual keyboards can be displayed by the application program depending on the type of information that a certain line is designed to accept. These three types are an alphanumeric keyboard, a calendar keyboard, and a numeric keyboard. For example, since a claim number may have both numerical and alphabetic characters, the virtual keyboard displayed for completing the claim number line is an alphanumeric keyboard. Thus, virtual alphanumeric keyboard 34 automatically appears on screen 102 in response to a user selecting the claim number line of claim information section 31. A user may choose not to utilize the display portion of virtual alphanumeric keyboard 34. In that case, display portion 34a is not available and thus "Claim 1" shown in display portion 34a is not shown. This selection is shown by rectangle 32 surrounding the claim number line. The user can utilize virtual keyboard 34 by clicking the pen on a desired "virtual key" of the keyboard. The policy number line in claim information section 31 also accepts alphanumeric information, and as such, selection of the policy number line also invokes alphanumeric virtual keyboard 34.

Selection of the loss date line in claim information section 31 invokes virtual calendar keyboard 35 shown in Figure 3B. As shown in Figure 3B, rectangle 37 automatically appears on screen 102 upon the selection of the loss date line. By clicking on the appropriate "virtual key" on virtual calendar keyboard 35, a user can enter the desired date in the loss date line. The configuration of virtual calendar keyboard 35 may be different from that shown in Figure 3B. For example, display portion 35a may not be available. In that case the date, namely "10-04-93", would not be shown on virtual calendar keyboard 35. As shown in Figure 3C, selection of the agent phone line of claim information section 31 invokes a virtual numeric keyboard 42. This selection is indicated by rectangle 41 surrounding the agent phone line in claim information section 31. The remaining sections of the administrative folder shown in screen 102, namely, inspection section 33, owner section 36, repair facility section 38, and estimate remarks section 39 are also completed by clicking on, i.e. selecting, a desired line. A virtual keyboard automatically appears in response to the selection. The user then enters the desired information by using the virtual keyboard. Figure 3D shows an example of a completed screen 102 in Administrative folder 30.

Clicking the pen once on Vehicle ID folder tab 40 opens screen 103 shown in Figure 4. A vehicle must be properly identified prior to proceeding with the damage estimating system of the present invention. One reason for this is that identification of the make, model, year, engine type, and "options" available in a damaged vehicle is needed in order to recall repair and replacement estimate information from the vehicle data base of the present invention. As shown in Figure 4, vehicle identification number 45 is entered next to VIN. Clicking once on the box next to "Make" causes a list (not shown) of various makes and models of automobiles to appear on screen 103. The user can select the make and model of the damaged vehicle by clicking once on the correct make and model in the list. An example is shown in line 43 of screen 103. In a similar manner, the user selects the year and engine type for the selected make and model.

With respect to the "Options" line, the options listed by the application program (not shown) are those that are available for the make and model specified by the user. An example of available options for a vehicle identified by the user is shown in box 48 in screen 103. The desired options are selected by clicking once on the listed options.

The next page under Estimates folder 16 is the Damages page. Clicking once on Damages 50 label causes a Damages screen of the Damages page to be opened. The operations performed and the options available in the Damages page of the present invention provide a number of advances in the art of insurance estimating. Figures 5A through 5C show screens 103 through 105 which provide an overview of the types of operations and options available in the Damages page of the present invention. Screen 103 in Figure 5A is shown in a "split mode," i.e. screen 103 is divided into two sections. One section is textual list section 57, and the other section is graphics section 61. Each line in textual list section 57 is the name of a vehicle part whose graphics icon is displayed in graphics section 61. Conversely, each graphics icon, such as graphics icon 56, in graphics section 61 corresponds to a name of a vehicle part in textual list 57. Each one of the many small circles in graphics section 61 is a "hot spot," such as hot spot 53. Each hot spot is associated with a unique graphics icon by means of an arrow, such as arrow 62, pointing to the corresponding graphics icon (each arrow is also referred to as a "pointer" in this application). The hot spots, graphics icons, and vehicle part names in the textual list are the three different means by which the present invention allows a user to select desired vehicle parts for repair, replacement, or other operations. The hot spots, graphics icons, and vehicle part names in the textual list are also referred to as "identifiers" in the present application.

Navigation bar 63 is located atop and borders graphics section 61 and textual list 57. Navigation bar 63 allows a user to find, display, and select various parts of a vehicle. From right to left, navigation bar 63 is comprised of a vehicle sections list. The vehicle sections list is activated by clicking once on button 49 which causes a list of main vehicle sections and vehicle

subsections available for the selected vehicle to appear on screen 103 (this list is not shown in Figure 5A). Each main vehicle section or vehicle subsection in the list corresponds to a unique "layer" of vehicle parts (hereinafter, the term "layer" is used to refer to either a main vehicle section or a vehicle subsection). For example, the exterior sheet metal of the vehicle is one of such layers, and a main vehicle section called "catastrophe" represents that layer (the exterior sheet metal layer) in the vehicle section list. Other layers are arranged in groups and in the order of increasing distance from the exterior sheet metal of the vehicle. The exterior sheet metal of the vehicle is the outermost layer for all vehicles and is also called the "catastrophe" layer as stated above (the catastrophe layer is shown in Figure 7). One of the main vehicle sections below the catastrophe vehicle section (or the catastrophe layer) is, for example, the "front end panel and lamps" vehicle subsection (or the "front end panel and lamps" layer). When the user selects a particular main vehicle section or a vehicle subsection, its name is automatically displayed in a rectangular box 48, as shown in Figure 5A.

The following discussion illustrates how the vehicle layers are arranged according to our invention (the vehicle layers discussed below are not shown in any of the drawings unless a drawing is specially stated to show a particular vehicle layer). As stated above, the catastrophe layer is the outermost layer of all vehicles. A special layer that can be thought of as a part of the catastrophe layer, but that is given its own separate name, is the "stripes and moldings" layer. The stripes and moldings layer does not have any other layer beneath it. Other main vehicle sections and vehicle subsections are comprised of a number of layers, each layer having at least one other layer next to it. Some layers have a layer located below and a layer located above, some layers have just a layer located below, or just a layer located above. "Front bumper" is one of the main vehicle sections immediately below the catastrophe layer. As examples of other main vehicle sections immediately below the catastrophe layer are "front body and windshield," "wheels," "roof," and "front doors"(these main vehicle

sections are given only as examples since these are not all of the main vehicle sections that are immediately below the catastrophe layer). Layers located under these main vehicle sections are vehicle subsections. Each main vehicle sections is comprised of a number of vehicle subsections.

As an example of layers located under the front bumper layer, in the order of increasing distance from the exterior sheet metal, are: "front end panel and lamps," "radiator support and cooling," and "cooling and air conditioning." These layers are thus vehicle subsections that are located under the main vehicle section of front bumper. Layers under the front body and windshield layer, again in the order of increasing distance from the exterior sheet metal, are: "front body interior sheet metal," "engine and components," and "engine mounts." These layers are thus vehicle subsections that are located under the main vehicle section of front body and windshield. Layers located under the wheels layer, in the order of increasing distance from the exterior sheet metal, are: "front suspension," "steering," and "rear suspension." These layers are thus vehicle subsections that are located under the main vehicle section of wheels. Layers located under the roof layer, in the order of increasing distance from the exterior sheet metal, are: "dashboard and components," "upper steering components," and "center console and seats." These layers are thus vehicle subsections that are located under the main vehicle section of roof. Layers located under the front doors layer, in the order of increasing distance from the exterior sheet metal, are: "quarter and rocker panel," and "inner quarter and panels." These layers are thus vehicle subsections that are located under the main vehicle section of front doors (a sample list 81 of the main vehicle sections and subsections discussed above is shown in Figure 8) .

As stated above, each vehicle section is comprised of a number of vehicle parts. These parts can be displayed in graphics section 61 and/or listed in textual list section 57. For example, Figure 5A shows vehicle parts for the front end panel and lamps vehicle subsection (specific to the user selected vehicle) displayed in graphics section 61 and also listed in textual list section 57. Each main vehicle section or vehicle subsection is thus a

subset of connected vehicle parts, the entire set of connected parts being the vehicle. Each one of the vehicle parts can be represented by at least three identifiers, namely, the graphics icons, hot spots, and names in the textual list. The user may select a vehicle part (for example, for repair or replacement) using any of these three identifiers.

Continuing with the overview and still referring to Figure 5A, the next item displayed in navigation bar 63 is vehicle image 52. The vehicle image is a second way in which a main vehicle section may be selected (as discussed above, the first way is to use the vehicle section list). Each "identifier circle" on the vehicle image designates a main vehicle section. For example, in Figure 5A, the identifier circle that appears dark indicates that the main vehicle section of front bumper is selected. The remaining identifier circles appear unshaded, indicating that their corresponding main vehicle sections have not been selected. The main vehicle sections corresponding to the unselected identifier circles are "front body and windshield," "wheels," "roof," "front doors," and "tailgate." It is noted that the identifier circles do not indicate which vehicle subsections (i.e. which layers below a main vehicle section) have been selected. For example, vehicle image 52 shown in Figure 5A indicates that the main vehicle section selected is the front bumper section. However, the vehicle subsection displayed in graphics section 61, and listed in textual list 57, is the front end panel and lamps subsection as indicated in box 48. With regard to vehicle image 52, it is noted that although the vehicle parts recalled from the vehicle data base of the application program and all damage estimates correspond to the specific vehicle selected by the user during the vehicle identification procedure, there are only nine generic vehicle images 52 which are displayed in navigation bar 63. The nine generic vehicle images are: two door hatchback, four door hatchback, two door coupe, four door coupe, two door wagon, four door wagon, two door pick-up, four door pick-up, and van.

To the left of the vehicle image 52 in navigation bar 63, a maximum of three selection circles appear. Figure 5A shows only two of these three

selection circles, a third one is shown in Figure 7. The first selection circle (shown in Figure 5A) is "Section refinish." This selection circle is used if it is desired to refinish the entire exterior sheet metal or one of the main vehicle sections. The second selection circle (shown in Figure 5A) is "Stripes and moldings" which is one of the main vehicle sections discussed above. This selection circle indicates that the stripes and moldings vehicle section has been selected. The stripes and moldings section can also be selected by means of activating the vehicle section list by clicking on button 49. The third selection circle (shown in Figure 7) is "Catastrophe" which is also one of the main vehicle sections discussed above. This selection circle indicates that the catastrophe vehicle section has been selected. The catastrophe section can also be selected by means of activating the vehicle section list by clicking on button 49.

To the left of the selection circles is section 59 which allows a user to "drill in" or "drill out" of various layers of the vehicle. The "drill in" and "drill out" operations allow the user to conveniently select various layers of a vehicle for display on graphics section 61 and/or for listing in textual list section 57. The drill in button can be used for all vehicle layers except the lowest layers. For example, once the main vehicle section of front bumper is selected, clicking once on the drill in button causes the vehicle layer next to, and farther away from, the exterior sheet metal layer to be displayed and/or listed. That vehicle layer is the vehicle subsection front end panel and lamps which is displayed and listed in Figure 5A. A second method to select the front end panel and lamps layer is by "dropping" the vehicle section list, such as list 81 shown in Figure 8, by clicking once on button 49. List 81, shown in Figure 8, displays both the main vehicle section front bumper and its respective subsections, including the front end panel and lamps layer, appearing below the front bumper. The user can then click once on the name "front end panel and lamps" appearing on this list, thereby selecting that vehicle subsection for display in graphics section 61 and/or for listing in textual list 57. Referring again to Figure 5A, a third method to select the front end panel and lamps layer is to click twice on the

front bumper identifier circle on vehicle image 52. This causes a "mini" list to appear that lists only those vehicle subsections below the main vehicle section of front bumper. This "mini" list is shown as list 71 in Figure 5B. As shown there, the list contains the vehicle subsections: front end panel and lamps, radiator support, and cooling and air conditioning below the main vehicle section of front bumper. The user may then select the next lower layer, namely, the front end panel and lamps, as well as other lower layers, from this list.

After the front end panel and lamps vehicle layer is displayed and/or listed, the user may again click once on the drill in button and recall the next lower layer which is the radiator support layer. Alternatively, the user may use the second or third method described above to recall the radiator support layer. After this layer is displayed and/or listed, the user may again click once on the drill in button to recall the next lower layer, also being the lowest layer under the main vehicle section of front bumper, which is the cooling and air conditioning layer. Alternatively, the user may use the second or third method described above to recall the cooling and air conditioning layer.

The drill out button works similarly to the drill in button. The drill out button is used to recall layers located closer to the exterior sheet metal from the layer presently being displayed and/or listed. For example, if the presently displayed layer is the cooling and air conditioning layer, clicking once on the drill out button causes the radiator support layer to be recalled. Clicking once again on the drill out button causes the front end panel and lamps to be recalled. Clicking again on the drill out button causes the front bumper to be recalled. The second and third methods described above can also be used to recall the radiator support layer, front end panel and lamps, and front bumper layers.

As stated above, the exterior sheet metal of a vehicle (or the catastrophe layer) is the outermost layer of all vehicles. The catastrophe layer may be recalled by clicking once on the drill out button while a main vehicle section, such as the front bumper, is being displayed and/or listed.

Alternatively, the second method described above can be used; that is, the user can drop vehicle section list 81 shown in Figure 8 by clicking once on button 49 and then selecting the catastrophe layer by clicking once on "Catastrophe." A third method to recall the catastrophe section is to click once on the catastrophe selection circle discussed above. In short, the present invention allows the user to "drill in to" and "drill out of" various vehicle layers by different methods. This ability to perform drill in and drill out operations presents a major advance over the prior art since it permits easy and quick insurance estimating in addition to preventing errors.

Continuing with the overview and still referring to Figure 5A, to the left of the drill in and drill out buttons is section 60 which allows a user to select whether a selected part belongs to the left, right, or both sides of a vehicle. If the selected part belongs to the left side only, the respective hot spot will have its left side darkened. This is shown by hot spot 55 in Figure 5A. The "Lens, Headlamp" name in textual list 57 corresponds to hot spot 55 in graphics section 61. If the selected part belongs to the right side only, the respective hot spot will have its right side darkened (this is not shown in Figure 5A). If the selected part belongs to the both sides of the vehicle, the respective hot spot will be completely darkened (not shown in Figure 5A). According to the invention, if a user decides to seletect parts belonging to the left side of a vehicle, the remaining parts selected by the user would be defaulted as also belonging to the left side. The default can of course be overiddent by the user by indicating that the selected part belongs to the right side of the vehicle. Likewise, if a user decides to seletect parts belonging to the right side of a vehicle, the remaining parts selected by the user would be defaulted as also belonging to the right side. As before, the default can be overiddent by the user by indicating that the selected part belongs to the left side of the vehicle.

Continuing with the overview, Damage summary area 47 in Figure 5A indicates the vehicle parts selected for repair, replacement, or refinishing. From left to right, "Damages List" 51 portion of the Damage

summary area 47 displays the last three entries in a list of damages. The user may view the entire list by clicking once on the arrow next to the words "Damages List." The vehicle parts that are listed in Damages List 51 are those parts that have been selected by either of the following two methods. The first method is clicking twice on one of the three "identifiers" discussed above. That is, by clicking twice on a hot spot, graphics icon, or vehicle part name in the textual list, all identifying the vehicle part to be selected. After the twice clicking on any one of the identifiers, the vehicle part is selected for a default operation. The default operation is, depending on the part selected, either an automatic replacement of the selected part or an automatic replacement and refinishing. Thus, upon selection of a part, the invention determines whether the default operation for the selected part requires refinishing in addition to replacement. "Operation" 74 heading in Damage summary area 47 lists the operations that are to be performed on a selected part. "L/R" 73 heading next to operations 74 heading indicates whether the selected vehicle part belongs to the left, right, or both sides of the vehicle. "Price" 75 heading indicates the cost of the selected vehicle part (if the operation is a replacement). "Hrs" 76 heading indicates the number of hours of labor for performing the selected operation. "Rate" 77 contains codes corresponding to the hourly rate for performing the selected operation. "Total" 78 indicates the line total, including any cost for replacement and the cost of labor, for the selected operation. Box 79 contains the grand total of all selected operations, including any that are not shown in Damage summery area 47 (recall that only the last three damage entries are displayed in this area).

The default operation on a selected vehicle part, selected by clicking twice on any one of the identifiers, can be overridden. This is accomplished by clicking only once on any one of the identifiers. Thereafter, clicking once on operation 74 gives the user options of available operations for the selected part. For example, the user may override a replacement operation with a repair operation, or override a replacement operation with a

replacement and refinish operation. Likewise, clicking once on Prices 75, Hrs 76, or Rates 77 allows the user to override the respective default numbers for the selected vehicle part. Instead of selecting defaults and overriding them later, the user may simply begin by clicking only once on any one of the identifiers in order to use his or her own "customized" operation, prices, hours, and rates. In that case, there are no defaults to be overridden; there are simply blanks to be filled in.

Referring to Figure 5C and continuing with the overview, list 72 shows some of the options that are available to a user for displaying items of interest. For example, as indicated by the check marks next to items listed, the "tool bar" (i.e. navigation bar 63), "parts list" (i.e. textual list 57), "damages list" (i.e. Damage summary area 47), "drill buttons" (i.e. section 59), and "vehicle icon" (i.e. vehicle image 52) have been selected by the user for display on screen 104. "Graphic" (i.e. graphics section 61) and "parts list and graphic" (i.e. a split mode for displaying both textual list 57 and graphics section 61) are deselected as shown in list 72. Figure 5D shows an example of a user selecting display of graphics section 61, and deselecting display of textual list 57. Thus, while Figure 5A shows screen 103 in a "split mode," Figure 5C shows an example of displaying the textual list only, and Figure 5D shows an example of displaying graphics section 61 only.

Three features of the present invention that are particularly helpful in the insurance estimating system of the invention are described below in more detail. The first of these three features is the drill in and drill out feature. As stated above, this feature allows a user to select vehicle parts belonging to layers of various "depths." Figure 6A shows the main vehicle section of front bumper selected by a user in a "split mode" (i.e., displaying both textual list 57 and graphics section 61 on screen 106). Textual list 57 is scrollable and contains the names of all of the vehicle parts displayed in graphics section 61; however, some of the names are not shown in textual list 57 of screen 106 due to length limitation of the list that can be displayed on the screen. It is noted that the main vehicle sections, vehicle subsections, and vehicle parts belong to the particular vehicle specified by

the user during the vehicle identification procedure described above. Also, as with the discussions above, vehicle sections or subsections are also referred to as vehicle layers in the following discussion.

The vehicle parts that are listed in textual list 57 are: front bumper (P1), front bumper cover (P2), front valance panel (P3), front bumper cover (P4), front bumper reinforcement (P5), front bumper shim (P6), front mounting bracket (P7), front license plate bracket (P8), front reinforcement support (P9), front bumper support (P10), front valance panel support (P11), energy absorption plate (P12), energy absorption plate (P13), front energy absorber (P14), and front bumper guard (P15). All of these parts are displayed on graphics section 61 and are identified by their respective hot spots. For example, front license plate (P8) is identified by hot spot P8 shown in graphics section 61 of screen 106.

Figure 6B shows screen 107 displayed when the user "drills into" the layer immediately below the front bumper layer, that is the front end panel and lamps layer. The "drill in" is performed by any of the three methods described above. As with Figure 6A, Figure 6B is shown in the "split mode." Also, textual list 57 is scrollable and contains the names of all of the vehicle parts displayed in graphics section 61; however, some of the names are not shown in textual list 57 of screen 107 due to length limitation of the list that can be displayed on the screen.

The vehicle parts that are listed in textual list 57 are: grille assembly (P1), grille appliqué (P2), grille emblem (P3), outer capsule assembly (P4), inner capsule assembly (P5), outer beam retention ring (P6), inner beam retention ring (P7), outer sealed beam (P8), inner sealed beam (P9), headlamp mounting panel (P10), parklamp assembly (P11), parklamp socket (P12), side marker lamp (P13), front side marker socket (P14), grille assembly (P15), and front panel filler (P16). All of these parts are displayed on graphics section 61 and are identified by their respective hot spots. For example, grille assembly (P15) is identified by hot spot P15 shown in graphics section 61 of screen 107.

Figure 6C shows screen 108 displayed when the user "drills into" the layer immediately below the front end panel and lamps layer, that is the radiator support layer. Again, the "drill in" can be performed by any of the three methods described above. As with Figures 6A and 6B, Figure 6C is shown in the "split mode." Further, textual list 57 is scrollable and contains the names of all of the vehicle parts displayed in graphics section 61; however, some of the names are not shown in textual list 57 of screen 108 due to length limitation of the textual list that can be displayed on the screen.

The vehicle parts that are listed in textual list 57 are: radiator support panel (P1), radiator lower panel (P2), radiator panel support (P3), a first radiator panel (P4), a second radiator panel (P5), upper radiator mounting panel (P6), a first radiator panel brace (P7), a second radiator panel brace (P8), radiator support lower bracket (P9), battery tray (P10), a first radiator mounting panel seal (P11), a second radiator mounting panel seal (P12), a third radiator mounting panel seal (P13), a fourth radiator mounting panel seal (P14), heat shield (P15), and high note horn (P16). All of these parts are displayed on graphics section 61 and are identified by their respective hot spots. For example, radiator support panel (P1) is identified by hot spot P1 shown in graphics section 61 of screen 107.

Figure 6D shows screen 109 displayed when the user "drills into" the layer immediately below the radiator support layer, that is the cooling and air conditioning layer. The "drill in" can be performed by any of the three methods described above. As with Figures 6A through 6C, Figure 6D is shown in the "split mode." As with Figures 6A through 6C, textual list 57 is scrollable and contains the names of all of the vehicle parts displayed in graphics section 61; however, some of the names are not shown in textual list 57 of screen 109 due to length limitation of the list that can be displayed on the screen.

The vehicle parts that are listed in textual list 57 are: dehydrator receiver (P1), A/C compressor (P2), radiator (P3), coolant recovery tank (P4), radiator shroud (P5), engine fan blade (P6), cooling fan motor (P7), A/C

condenser (P8), radiator upper hose (P9), and radiator lower hose (P10). All of these parts are displayed on graphics section 61 and are identified by their respective hot spots. For example, engine fan blade (P6) is identified by hot spot P6 shown in graphics section 61 of screen 109.

The second feature of our invention that is particularly helpful in insurance estimating is the catastrophe feature. Figure 7 shows screen 110 when the catastrophe mode is selected. As stated above, there are three ways of invoking the catastrophe mode of the invention. The user can click once on the catastrophe selection circle, indicated by "Cat" in navigation bar 63 of screen 110. Alternatively, the user can drop down a list by touching button 49 in screen 110 and a list 81 shown in Figure 8 appears. The user can then click on "Catastrophe" in list 81. This invokes the catastrophe mode of the invention. Yet another way to invoke the catastrophe feature is to click on the drill out button enough times to reach the catastrophe layer, which is always the highest layer of all drill sequences. Once the catastrophe mode is invoked, the outer layer of the vehicle, including the exterior sheet metal and the windshields, appears on graphics section 61. As shown in Figure 7, in the catastrophe mode the application program displays various sections of the outer layer of the vehicle such as the rear bumper, rear window, windshield, doors, rear and front fenders, and the hood of the vehicle. Further, clicking on certain hot spots selects a combination of sections of the outer layer. For example, clicking on hot spot 82 selects all of the sections shown in graphics section 61, while clicking on hot spot 83 selects the left front fender, left door, and the left rear fender.

Although the parts recalled from the vehicle data base of the application program and all damage estimates correspond to the specific vehicle selected by the user in the vehicle identification procedure, the catastrophe feature displays only nine generic vehicle images 52. Moreover, in the catastrophe mode, vehicle sections displayed on graphics section 61 represent only the nine generic vehicle images. The nine generic vehicle images are: two door hatchback, four door hatchback, two door

coupe, four door coupe, two door wagon, four door wagon, two door pick-up, four door pick-up, and van. In the catastrophe mode, the left and right parts of a vehicle appear separately in graphics section 61. In other words, unlike the graphics displays discussed thus far, in the catastrophe mode the user must select the left or right vehicle part on graphics section 61, as opposed to making the selection by the "Left," "Right," and "Both" selection circles in section 60. For this reason, the "Left," "Right," and "Both" selection circles in section 60 of screen 110 appear shaded, indicating their unavailability. As stated above, a user can select a particular catastrophe section, such as left door 84 in Figure 7, and "drill into" that section by clicking on the drill in button, one layer at a time, to recall lower layers. From lower layers, the user can drill out back to the catastrophe layer by clicking on the drill out button, one layer at a time. By drilling into a particular catastrophe section, the user can select a vehicle subsection for repair, replacement, or other operations.

The present invention keeps track of which main vehicle sections or vehicle subsections were selected during a catastrophe estimating exercise. Accordingly, when the user utilizes a non-catastrophe mode to select a vehicle section or subsection for repair, replacement, or other operations, the invention prevents adding the vehicle section or subsection that was selected in an earlier catastrophe estimating exercise. For example, if the user had selected "windshield" 85 (Figure 7) in the catastrophe mode, selection of "front body and windshield" 86 (shown in list 81 in Figure 8) in a subsequent estimating exercise will not cause a doubling in the cost of repair, replacement, or other operations that are common to both the windshield section in the catastrophe mode, and the front body and windshield section in the non-catastrophe mode.

The flowchart in Figure 9 further illustrates how the drill in and catastrophe features are implemented in the present invention. Step 121 is the first step in performing a drill in exercise. For simplicity, suppose that a vehicle section (as opposed to a vehicle subsection) is being presently displayed by the present invention. In step 123, the application program

checks to see whether a vehicle section identifier circle on the vehicle image in the navigation bar is selected. If a vehicle section identifier circle is selected, the program searches the vehicle data base (step 127) for the vehicle section identified by the vehicle section identifier in step 123. In step 129, the program recalls the vehicle section identified in step 123. If no vehicle section was selected by a vehicle section identifier circle in step 123, the application program checks to see if any vehicle section names in the vehicle section list were selected in step 125. If a vehicle section name is selected, the program searches the vehicle data base (step 127) for the vehicle section identified by the vehicle section name in step 125. In step 129, the program recalls the vehicle section identified in step 125. If no vehicle section was selected by a vehicle section name in step 125, the application program returns to step 121 and checks again for vehicle section identifier circles on the vehicle image (step 123) or vehicle section names in the vehicle section list (step 125) until a vehicle section is selected.

Once the selected vehicle section is recalled from the vehicle data base in step 129, the program recalls a portion of the selected vehicle section called "array of primary parts structures" in step 131. The array of primary parts contains left and right specifiers, X-Y coordinates of the various polygons used to display the graphics icons, and X-Y coordinates of the hot spots pointing to the graphics icons. It is noted that some vehicle parts can be selected only once (either for the left or right side of the vehicle), or twice (for both the left and right sides of the vehicle). The left and right specifiers are used to keep track of selections of the vehicle parts that can be selected either once or twice. The X-Y coordinates of the polygons of graphics icons are used to display the vehicle parts that comprise the vehicle section that was just "drill into." Likewise, the X-Y coordinates of the hot spots pointing to the graphics icons decide the arrangement of hot spots on the screen and contain pointers to respective graphics icons. The array of primary parts structures is designed so that a user may exercise a variety of options to point to and select a desired vehicle part. These options are selecting a part by clicking on its graphics icon, hot spot, or the part name in

the textual list. Further, the user does not need to separately recall and separately display and select left and right vehicle parts. The user may simply use the left and right selection circles on the screen to select the left, right, or both the left and right vehicle parts.

In step 133, the program recalls the left and right specifiers of vehicle parts belonging to the vehicle section recalled during the drill in exercise in step 129. In step 135, the program recalls the X-Y coordinates of polygons of vehicle parts belonging to the vehicle section recalled during the drill in exercise in step 129. In step 137, the program recalls the X-Y coordinates of the hot spots pointing to the vehicle parts belonging to the vehicle section recalled during the drill in exercise in step 129. Finally, in step 139 the graphic icons of the vehicle parts belonging to the vehicle section "drilled into," and their respective hot spots, recalled from the vehicle data base are displayed. Also, in step 139, the textual list is updated with the vehicle part names comprising the vehicle section recalled from the vehicle data base in step 129. A new drill in exercise can now be performed beginning with step 121.

The drill out feature of the invention also uses a similar routine as that explained with respect to the drill in routine, with the exception that the vehicle sections (or subsections) selected by the user belong to a layer higher, as opposed to a layer lower, than the layer presently displayed on the screen. The Appendix following the "detailed description of the invention" contains an example of the computer code utilizing an object oriented method for implementing the drill in, drill out, and catastrophe features of the invention.

The drill in, drill out, and catastrophe features of our invention have a number of advantages over the prior art. For example, the drill in and drill out feature allows a methodic approach to estimating damage to a vehicle. The insurance estimator can verify all parts of a vehicle that are damaged or that are undamaged. The insurance estimator first begins with a main vehicle section, such as the front bumper section. After determining the vehicle parts that are damaged in the front bumper, the

estimator selects the damaged parts and enters a default or customized damage estimate in the damage summary area. Once damage to the main vehicle section is estimated, a lower layer, such as the front end panel and lamps layer, is recalled by utilizing the drill in feature. This permits the estimator to carefully consider damage to vehicle parts that are below a visibly damaged part. After determining the vehicle parts that are damaged in the front end panel and lamps layer, the estimator selects the damaged parts and enters a default or customized damage estimate in the damage summary area. Drilling into lower layers allows the estimator to methodically consider all parts that are not visibly damaged in performing the damage estimate to the entire vehicle.

Moreover, the drill out feature of the invention prevents oversight of damage to certain outer layers of the vehicle. For example, many insurance estimators have indicated that damage to interior parts of a vehicle may detract attention to damage to certain exterior parts. For example, damage to engine and related components has often detracted attention to damage to a broken windshield. With the insurance estimating system of the invention if an estimator pays especial attention to significant damage to the "engine and components" vehicle subsection, the estimator will be reminded to check damage to the "front body and windshield" main vehicle section in a drill out exercise. This is because the front body and windshield main vehicle section is a layer residing above the engine and components vehicle subsection.

The catastrophe feature of the invention also has many advantages over the prior art. Frequently vehicles, such as automobiles, receive damage to the entire outer layer, including the exterior sheet metal, windows, and windshield. Examples of this type of damage are damages from hail, flood, sand, and a vandal "keying" the exterior sheet metal. In these situations, the insurance estimator is primarily interested in evaluating damage to the outer layer of the vehicle. The catastrophe mode is particularly useful in this situation since all of the vehicle sections of interest are displayed on one screen and damage estimating is performed

without the need to switch from one screen to another. For example, damage estimate to the front left fender and the front bumper can be accomplished without the need to first recall and display the front left fender for estimating damage, and then separately recall and display the front bumper. This also helps in reminding the insurance estimator to consider all of the various sections of the outer layer of the vehicle in performing the estimate. Moreover, in case of damage from natural phenomena, such as hail, sand, or flood, a large number of vehicles are damaged in a short period of time. By utilizing the catastrophe feature a large number of vehicles can be processed quickly and accurately in "drive through" insurance estimating centers. Furthermore, in any situation where a vehicle has been slightly damaged in the outer layer and the vehicle owner desires a quick estimating process, the catastrophe feature is particularly useful to expedite the damage estimating of the exterior of the vehicle.

Another feature of the invention that is particularly useful is that the invention allows the user to select a vehicle part in a variety of ways, and with a variety of options. This feature is referred to as the "multiple selection" feature. For example, as was discussed above, a user may select a vehicle part either by its graphics icon, its respective hot spot, or by selecting the vehicle part name on the textual list. As stated above, when a part belonging to the left, right, or both sides of a vehicle is selected, the hot spot corresponding to the vehicle part indicates this selection. For example, as shown by hot spot 55 in Figure 5A, the left part of the hot spot circle is darkened upon selection of the left headlamp lens. An important aspect of the multiple selection feature of the invention prevents "double charging" when one of the vehicle parts belonging to a vehicle section or subsection is an "assembly" consisting of a number of "components." An assembly is indicated by the symbol "a" if the assembly is unselected, and by the symbol "A" if the assembly is selected. The unselected halogen headlamp assembly is indicated by "a" in hot spot 54 in Figure 5A. This is also indicated by the symbol "a" next to the halogen headlamp assembly in textual list 57. The

graphic icons for the components of an assembly are shown next to the graphic icon of the assembly itself. For example, headlamp mounting panel (P1), headlamp halogen bulb (P2), and headlamp lens (P3) are components of, and are shown next to, halogen headlamp assembly (P0) in Figure 5A. The invention keeps track of selection of a component, such as headlamp halogen bulb (P2), for repair, replacement, or other operation. Thereafter, if the assembly itself is selected, for example if halogen headlamp assembly (P0) is selected, the invention deletes the cost of repair, replacement, or other operation that was earlier calculated for the component, which in the example is the cost of repair, replacement or other operation for headlamp halogen bulb (P2). Conversely, once an assembly is selected for repair, replacement, or other operation, the invention prevents double charging when the user inadvertently selects a component in a later estimation of damage to the vehicle. The Appendix following the "detailed description of the invention" contains an example of the computer code utilizing an object oriented method for implementing the "multiple selection" feature of our invention.

The insurance estimating system of the invention includes a "Rates/Totals" page in the Estimate folder as shown in Figure 10A. This page is used to adjust the cost of parts used in replacement of damaged parts, and also the cost of labor for repair, replacement, or other operations. The "Reports" folder of the invention, shown in Figure 10B, contains a summary of claim information and damage estimates. This folder is used to do changes to the estimated damage after the Damages page has already been utilized. For example, if the estimator decides to correct or adjust cost of replacement of a vehicle part, the estimator may accomplish the correction or adjustment in the Reports folder, instead of going back to the Damages page. Thus, the Reports folder adds to the convenience of our insurance estimating system. Figure 10C shows a page of the "Notes" folder. Each page in this folder is linked to a claim processed for a vehicle owner. The Notes folder allows entry of any notes that are helpful in processing the claim for which a damage estimate has been prepared. Upon

recalling a claim for reprocessing or for obtaining information, the Notes page linked to the claim is also recalled and is available to the estimator for his or her review and/or modifications.

Thus, a novel insurance estimating system has been described.

CLAIMS

1. In a computer system, a method for displaying a subset of a set of connected parts, said method comprising the steps of:

displaying a plurality of identifiers representing said set of connected parts;

selecting an identifier from said plurality of identifiers; and

displaying said subset of said set in response to said selecting step.

2. The method of claim 1 wherein said set of connected parts comprise parts of a vehicle.

3. The method of claim 2 wherein said plurality of identifiers comprise textual lists, graphics icons, and hot spots.

4. The method of claim 3 wherein said textual list comprises a list of vehicle parts displayed in a menu by said computer system.

5. The method of claim 3 wherein said graphics icons comprise images of vehicle parts displayed by said computer system.

6. The method of claim 3 wherein each of said hot spots comprises a pointer to a unique vehicle part displayed by said computer system.

7. The method of claim 4 wherein said selecting step comprises the step of selecting a vehicle part from said list of vehicle parts.

8. The method of claim 5 wherein said selecting step comprises the step of selecting a graphics icon.

9. The method of claim 6 wherein said selecting step comprises the step of selecting a hot spot.

10. The method of claim 1 wherein said set of connected parts represents a vehicle and said subset represents a layer of vehicle parts, said layer being comprised of a plurality of vehicle parts, each layer being located next to at least one other layer, whereby said vehicle is represented by a plurality of said layers of vehicle parts.

11. The method of claim 10 wherein said vehicle is an automobile.

12. The method of claim 11 wherein an outer sheet metal of said automobile is an outermost layer of said plurality of layers.

13. The method of claim 12 wherein said plurality of layers are arranged in order of distance from said outer sheet metal of said automobile.

14. The method of claim 1 wherein said subset is an outer sheet metal of an automobile.

ABSTRACT OF THE INVENTION

The present invention is an insurance estimating system that presents a number of advances over the prior art. The invention enables an insurance estimator to quickly and accurately estimate damage to various parts of a vehicle. The invention allows the estimator to analyze damage to various "layers" of a vehicle. If damage to an outer layer of a vehicle is visible, the insurance estimator will quickly perform a damage estimate using the catastrophe or drill in and drill out features of the invention. Nevertheless, the estimator will be reminded to also look for damage in lower layers of the vehicle that are not readily visible. Conversely, an estimator may begin estimating damage to a vehicle by focusing on the interior of a vehicle which has significant interior damage. The invention then reminds the estimator not to overlook slight damage to outer layers of the vehicle. The catastrophe feature of the invention permits insurance estimators to quickly and accurately perform a large number of damage estimates when damage is primarily to outer layers of the vehicle, such as damage resulting from hail, sand, or flood. The invention allows an insurance estimator to select a desired vehicle part for repair, replacement, or other operations, in a number of quick and convenient ways, and gives the estimator a number of options. The invention also prevents "double charging" when there is a possibility that a vehicle part may be selected more than once.

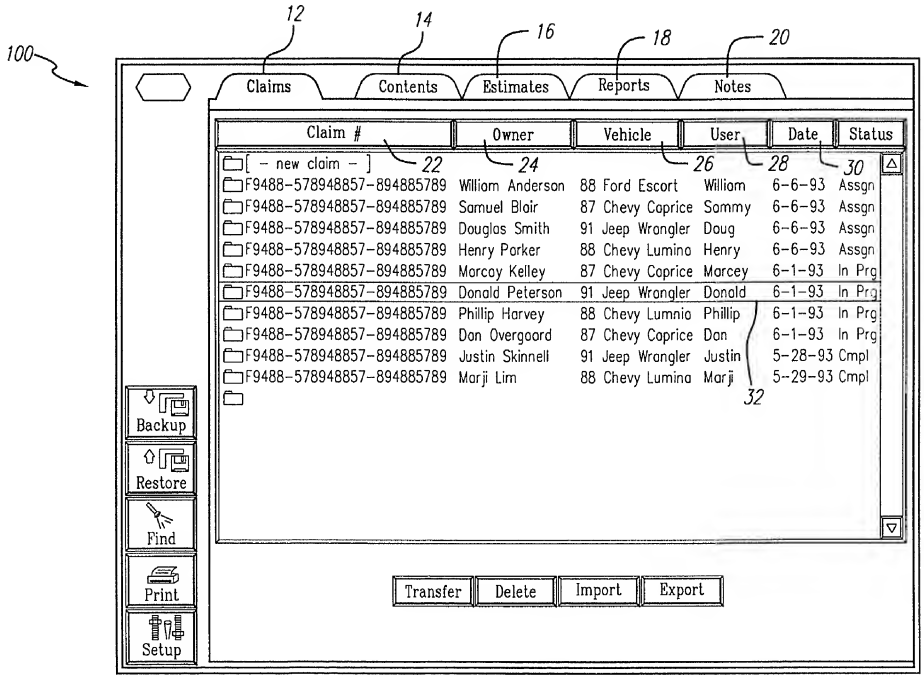

100
12
14
16
18
20
Claims
Contents
Estimates
Reports
Notes
Claim #
Owner
Vehicle
User
Date
Status
22
24
26
28
30
32
[- new claim -]
F9488-578948857-894885789 William Anderson 88 Ford Escort William 6-6-93 Assgn
F9488-578948857-894885789 Samuel Blair 87 Chevy Caprice Sammy 6-6-93 Assgn
F9488-578948857-894885789 Douglas Smith 91 Jeep Wrangler Doug 6-6-93 Assgn
F9488-578948857-894885789 Henry Parker 88 Chevy Lumina Henry 6-6-93 Assgn
F9488-578948857-894885789 Marcay Kelley 87 Chevy Caprice Marcey 6-1-93 In Prg
F9488-578948857-894885789 Donald Peterson 91 Jeep Wrangler Donald 6-1-93 In Prg
F9488-578948857-894885789 Phillip Harvey 88 Chevy Lumnia Phillip 6-1-93 In Prg
F9488-578948857-894885789 Don Overgoard 87 Chevy Caprice Don 6-1-93 In Prg
F9488-578948857-894885789 Justin Skinnell 91 Jeep Wrangler Justin 5-28-93 Cmpl
F9488-578948857-894885789 Marji Lim 88 Chevy Lumina Marji 5-29-93 Cmpl
Backup
Restore
Find
Print
Setup
Transfer
Delete
Import
Export

FIG. 1

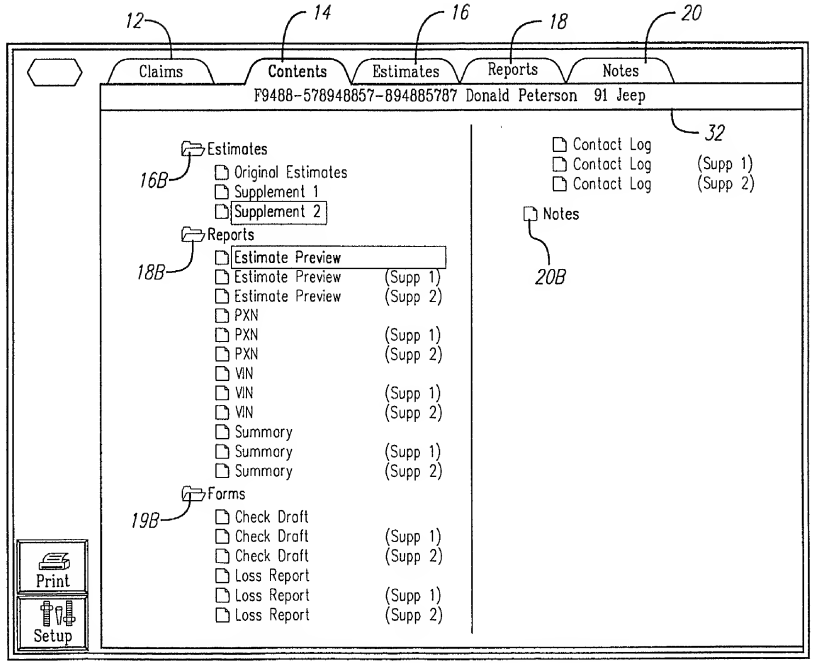

12
14
16
18
20
Claims
Contents
Estimates
Reports
Notes
F9488-578948657-894885787 Donald Peterson 91 Jeep
32
Estimates
16B
Original Estimates
Supplement 1
Supplement 2
Reports
18B
Estimate Preview
Estimate Preview (Supp 1)
Estimate Preview (Supp 2)
PXN
PXN (Supp 1)
PXN (Supp 2)
VIN
VIN (Supp 1)
VIN (Supp 2)
Summary
Summary (Supp 1)
Summary (Supp 2)
Forms
19B
Check Draft
Check Draft (Supp 1)
Check Draft (Supp 2)
Loss Report
Loss Report (Supp 1)
Loss Report (Supp 2)
Contact Log
Contact Log (Supp 1)
Contact Log (Supp 2)
Notes
20B
Print
Setup
101

FIG. 2

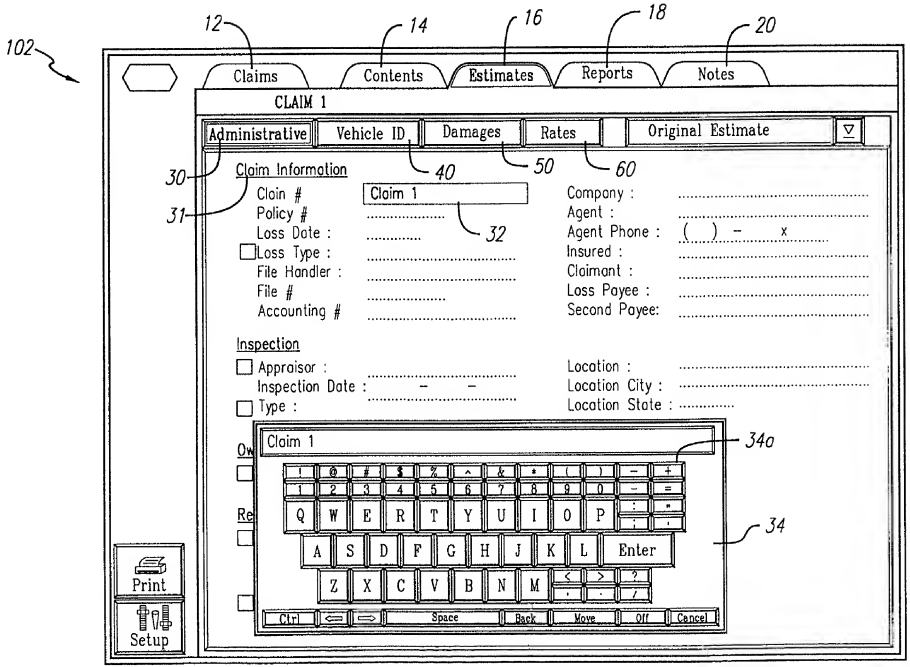

102
12
14
16
18
20
Claims
Contents
Estimates
Reports
Notes
CLAIM 1
Administrative
Vehicle ID
Damages
Rates
Original Estimate
30
31
40
50
60
Claim Information
Cloin #
Claim 1
Policy #
Loss Date :
32
Loss Type :
File Handler :
File #
Accounting #
Company :
Agent :
Agent Phone : ( ) - x
Insured :
Claimant :
Loss Payee :
Second Payee:
Inspection
Appraisor :
Inspection Date : - -
Type :
Location :
Location City :
Location State :
Claim 1
34a
34
Enter
Space
Back
Move
Off
Cancel
Print
Setup

FIG. 3A

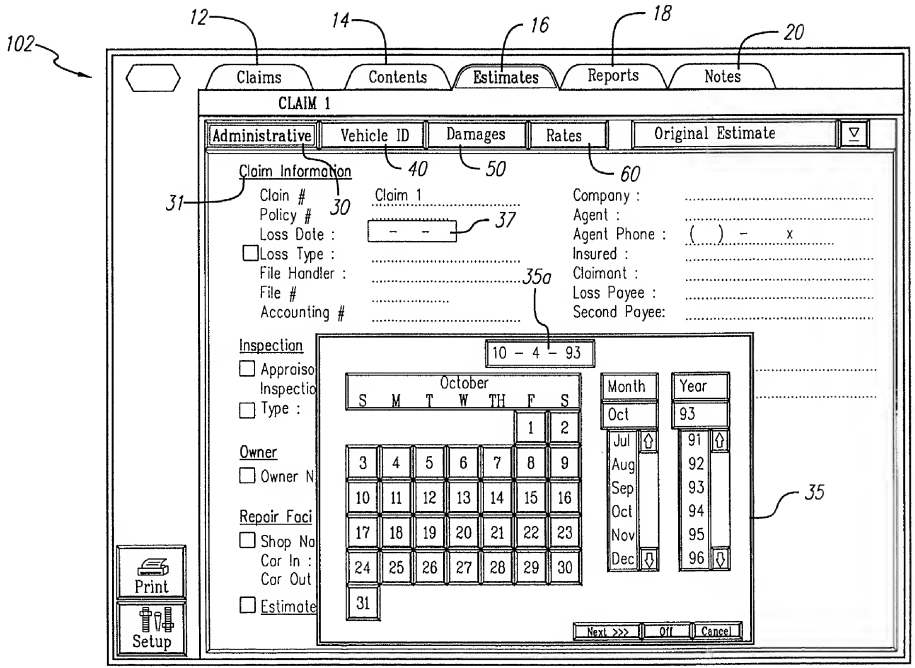

102
12
14
16
18
20
Claims
Contents
Estimates
Reports
Notes
CLAIM 1
Administrative
Vehicle ID
Damages
Rates
Original Estimate
40
50
60
Claim Information
31
30
Claim #
Policy #
Loss Date :
Loss Type :
File Handler :
File #
Accounting #
Claim 1
37
Company :
Agent :
Agent Phone :
Insured :
Claimant :
Loss Payee :
Second Payee:
35a
Inspection
Owner
Repair Faci
Shop No
Car In :
Car Out
Estimate
10 - 4 - 93
October
S M T W TH F S
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31
Month
Oct
Jul
Aug
Sep
Oct
Nov
Dec
Year
93
91
92
93
94
95
96
35
Next >>>
Off
Cancel
Print
Setup

FIG. 3B

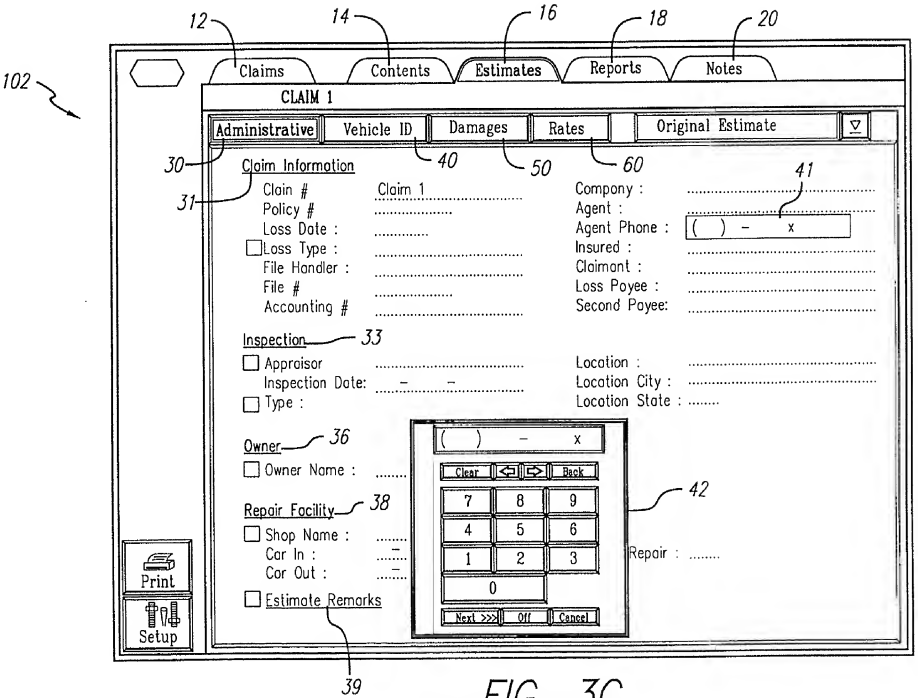

102
12
14
16
18
20
Claims
Contents
Estimates
Reports
Notes
CLAIM 1
Administrative
Vehicle ID
Damages
Rates
Original Estimate
30
40
50
60
Claim Information
31
Claim #
Claim 1
Policy #
Loss Date :
Loss Type :
File Handler :
File #
Accounting #
Company :
Agent :
Agent Phone :
( ) - x
41
Insured :
Claimant :
Loss Payee :
Second Payee:
Inspection
33
Appraisor
Inspection Date: - -
Type :
Location :
Location City :
Location State :
Owner
36
Owner Name :
Repair Facility
38
Shop Name :
Car In :
Car Out :
Estimate Remarks
39
( ) - x
Clear
Back
7
8
9
4
5
6
1
2
3
0
Next >>>
Off
Cancel
42
Repair :
Print
Setup

FIG. 3C

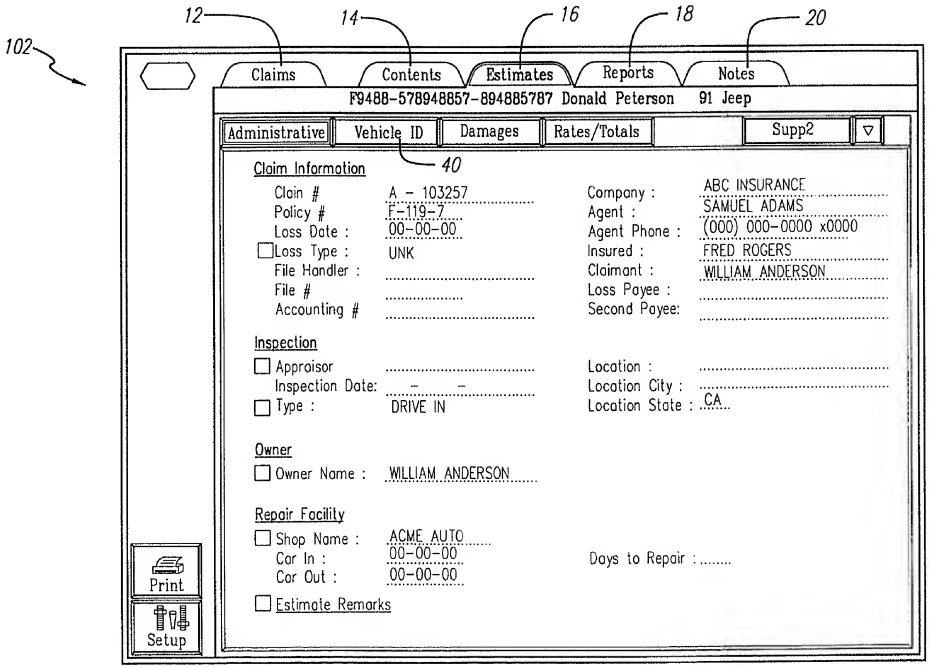

102
12
14
16
18
20
Claims
Contents
Estimates
Reports
Notes
F9488-578948857-894885787 Donald Peterson 91 Jeep
Administrative
Vehicle ID
Damages
Rates/Totals
Supp2
40
Claim Information
Clain # A - 103257
Policy # F-119-7
Loss Date : 00-00-00
Loss Type : UNK
File Handler :
File #
Accounting #
Company : ABC INSURANCE
Agent : SAMUEL ADAMS
Agent Phone : (000) 000-0000 x0000
Insured : FRED ROGERS
Claimant : WILLIAM ANDERSON
Loss Payee :
Second Payee:
Inspection
Appraisor
Inspection Date: - -
Type : DRIVE IN
Location :
Location City :
Location State : CA
Owner
Owner Name : WILLIAM ANDERSON
Repair Facility
Shop Name : ACME AUTO
Car In : 00-00-00
Car Out : 00-00-00
Estimate Remarks
Days to Repair :
Print
Setup

FIG. 3D

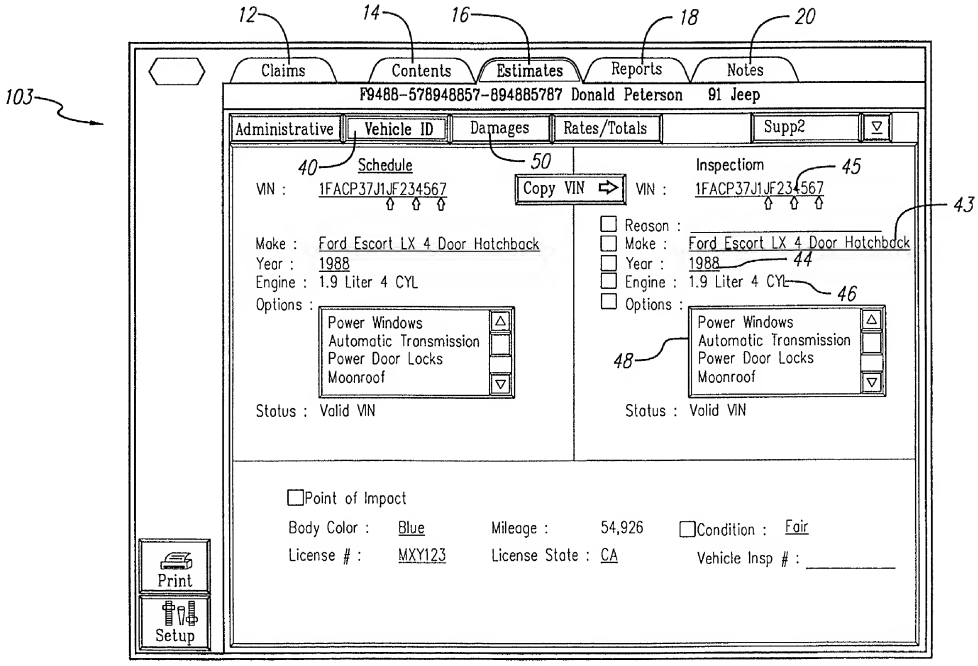

12
14
16
18
20
103
Claims
Contents
Estimates
Reports
Notes
F9488-578948857-894885787 Donald Peterson 91 Jeep
Administrative
Vehicle ID
Damages
Rates/Totals
Supp2
40
Schedule
50
Copy VIN
Inspection
45
43
VIN : 1FACP37J1JF234567
VIN : 1FACP37J1JF234567
Reason :
Make : Ford Escort LX 4 Door Hatchback
Year : 1988
Engine : 1.9 Liter 4 CYL
Options :
Power Windows
Automatic Transmission
Power Door Locks
Moonroof
Make : Ford Escort LX 4 Door Hatchback
Year : 1988
Engine : 1.9 Liter 4 CYL
Options :
44
46
48
Power Windows
Automatic Transmission
Power Door Locks
Moonroof
Status : Valid VIN
Status : Valid VIN
Point of Impact
Body Color : Blue
Mileage : 54,926
Condition : Fair
License # : MXY123
License State : CA
Vehicle Insp # :
Print
Setup

FIG. 4

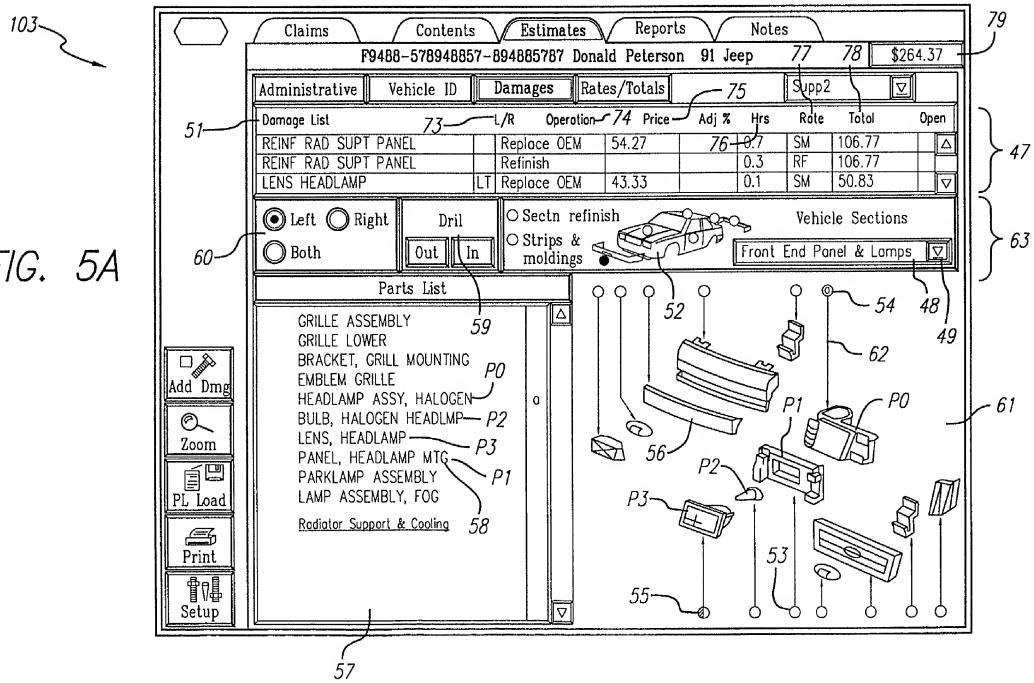

103
Claims
Contents
Estimates
Reports
Notes
79
F9488-578948857-894885787 Donald Peterson 91 Jeep
77
78
$264.37
Administrative
Vehicle ID
Damages
Rates/Totals
75
Supp2
51
Damage List
73
L/R
Operation
74
Price
Adj %
Hrs
Rate
Total
Open
76
REINF RAD SUPT PANEL
Replace OEM
54.27
0.7
SM
106.77
REINF RAD SUPT PANEL
Refinish
0.3
RF
106.77
LENS HEADLAMP
LT
Replace OEM
43.33
0.1
SM
50.83
47
Left
Right
Both
60
Dril
Out
In
Sectn refinish
Strips & moldings
Vehicle Sections
Front End Panel & Lamps
63
Parts List
GRILLE ASSEMBLY
GRILLE LOWER
BRACKET, GRILL MOUNTING
EMBLEM GRILLE
HEADLAMP ASSY, HALOGEN
BULB, HALOGEN HEADLMP
LENS, HEADLAMP
PANEL, HEADLAMP MTG
PARKLAMP ASSEMBLY
LAMP ASSEMBLY, FOG
Radiator Support & Cooling
59
P0
P2
P3
P1
58
52
54
48
49
62
61
P1
P0
56
P2
P3
53
55
Add Dmg
Zoom
PL Load
Print
Setup
57

FIG. 5A

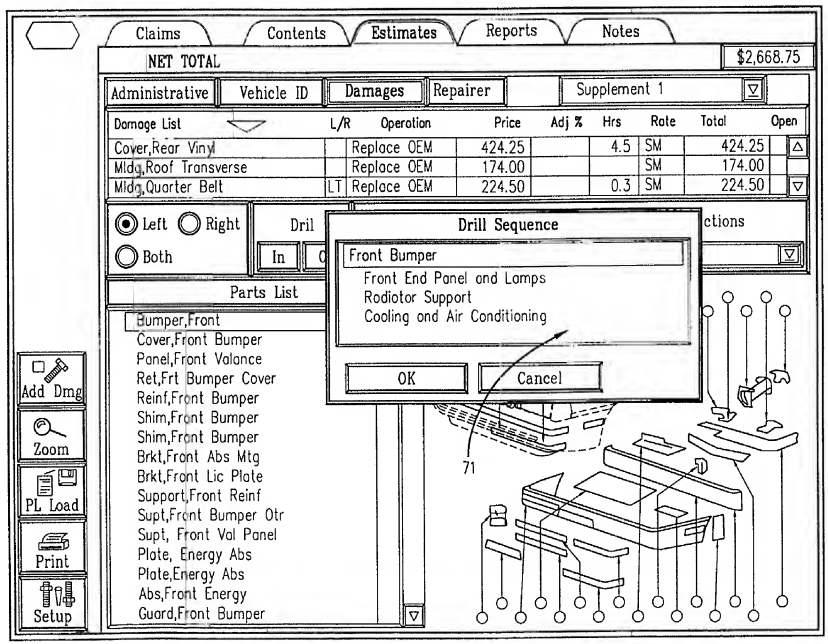

Claims
Contents
Estimates
Reports
Notes
NET TOTAL
$2,668.75
Administrative
Vehicle ID
Damages
Repairer
Supplement 1
Damage List
L/R
Operation
Price
Adj %
Hrs
Rate
Total
Open
Cover,Rear Vinyl
Replace OEM
424.25
4.5
SM
424.25
Mldg,Roof Transverse
Replace OEM
174.00
SM
174.00
Mldg,Quarter Belt
LT
Replace OEM
224.50
0.3
SM
224.50
Left
Right
Both
Drill Sequence
Front Bumper
Front End Panel and Lamps
Radiator Support
Cooling and Air Conditioning
OK
Cancel
Parts List
Bumper,Front
Cover,Front Bumper
Panel,Front Valance
Ret,Frt Bumper Cover
Reinf,Front Bumper
Shim,Front Bumper
Shim,Front Bumper
Brkt,Front Abs Mtg
Brkt,Front Lic Plate
Support,Front Reinf
Supt,Front Bumper Otr
Supt, Front Val Panel
Plate, Energy Abs
Plate,Energy Abs
Abs,Front Energy
Guard,Front Bumper
Add Dmg
Zoom
PL Load
Print
Setup
71

FIG. 5B

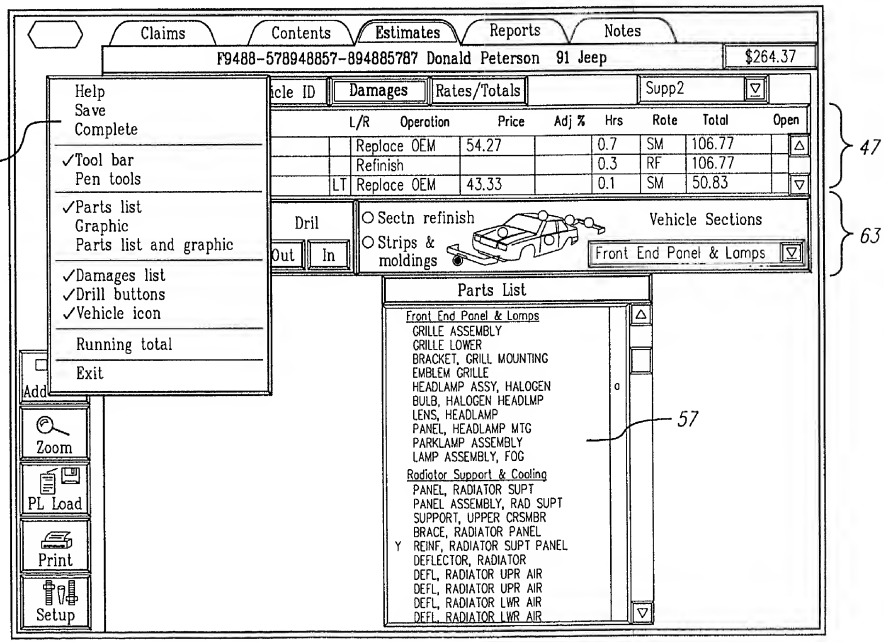


FIG. 5C

FIG. 5D

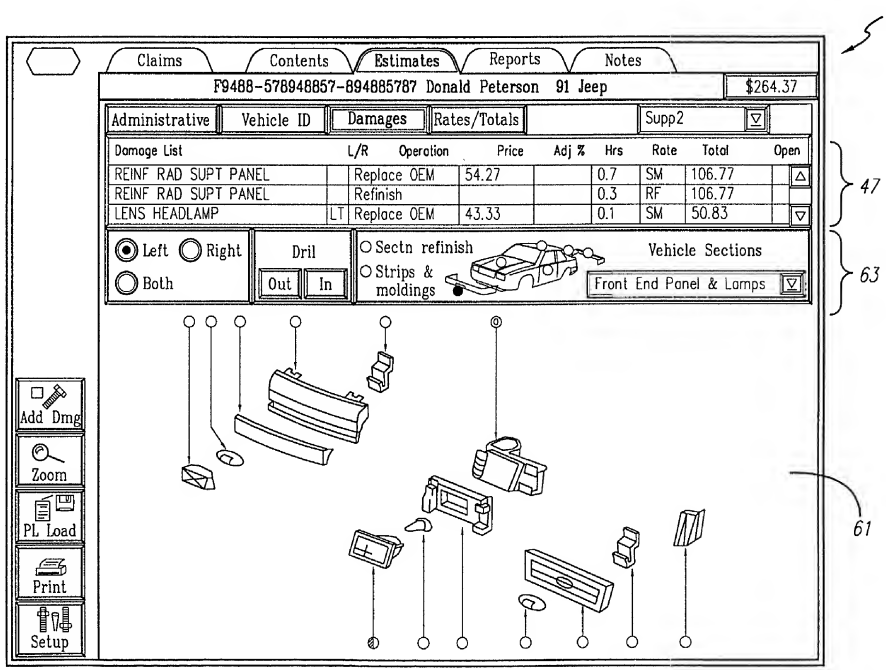


FIG. 6A

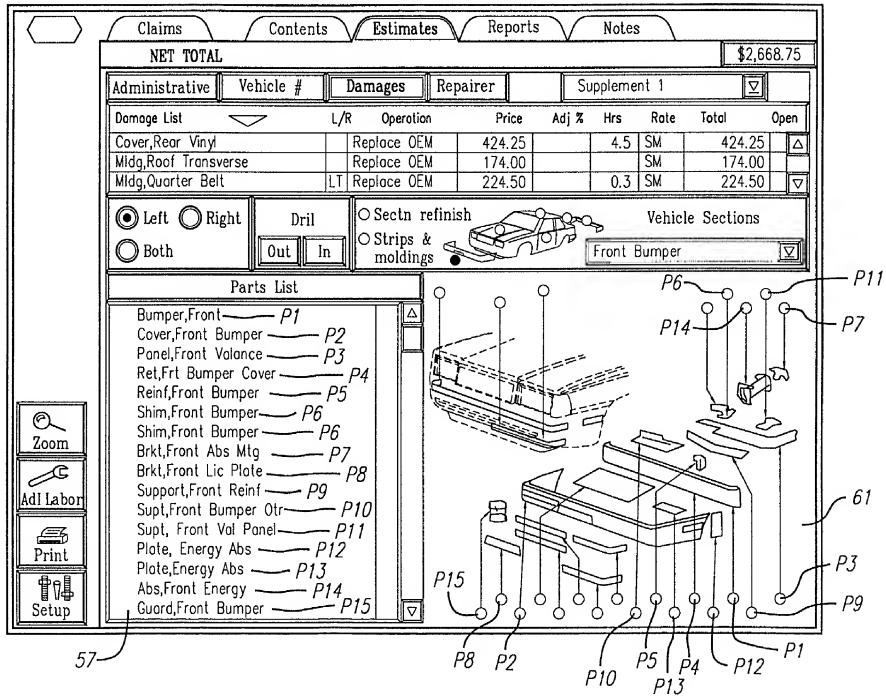
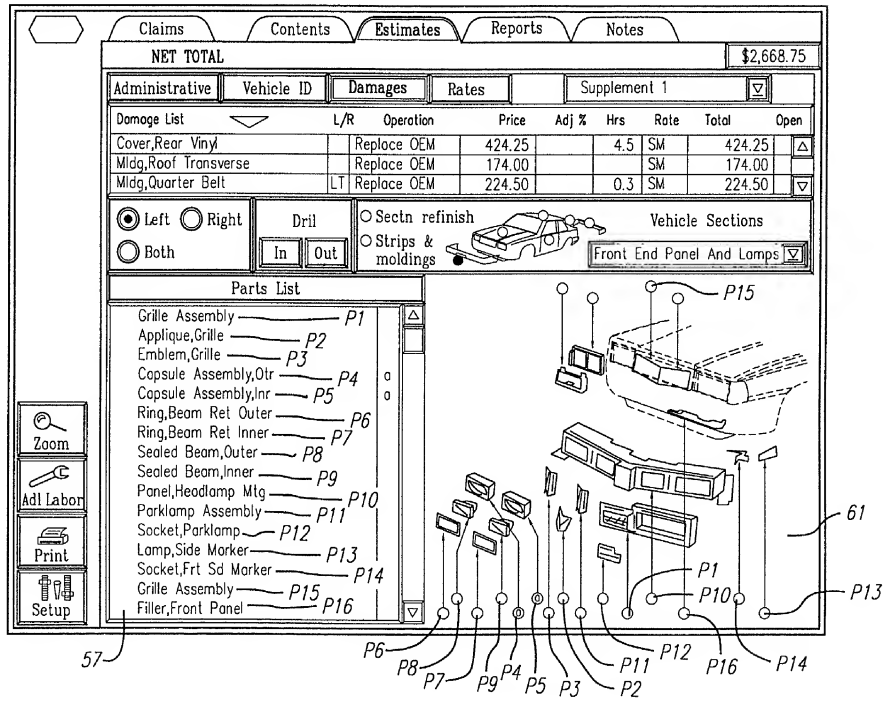
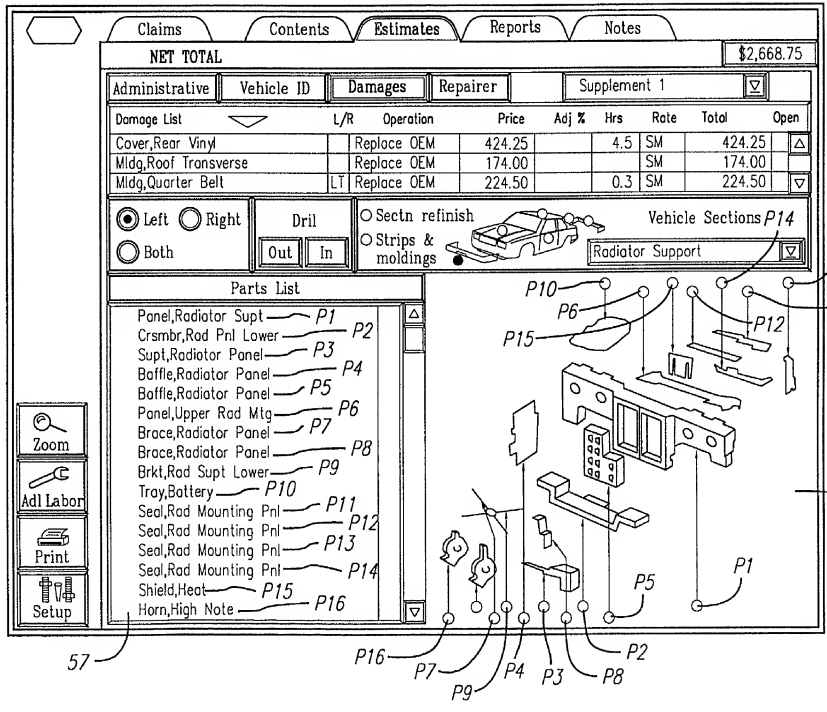

106
Claims
Contents
Estimates
Reports
Notes
NET TOTAL
$2,668.75
Administrative
Vehicle #
Damages
Repairer
Supplement 1
Damage List
L/R
Operation
Price
Adj %
Hrs
Rate
Total
Open
Cover,Rear Vinyl
Replace OEM
424.25
4.5
SM
424.25
Mldg,Roof Transverse
Replace OEM
174.00
SM
174.00
Mldg,Quarter Belt
LT
Replace OEM
224.50
0.3
SM
224.50
Left
Right
Both
Dril
Out
In
Sectn refinish
Strips & moldings
Vehicle Sections
Front Bumper
Parts List
Bumper,Front P1
Cover,Front Bumper P2
Panel,Front Valance P3
Ret,Frt Bumper Cover P4
Reinf,Front Bumper P5
Shim,Front Bumper P6
Shim,Front Bumper P6
Brkt,Front Abs Mtg P7
Brkt,Front Lic Plate P8
Support,Front Reinf P9
Supt,Front Bumper Otr P10
Supt, Front Val Panel P11
Plate, Energy Abs P12
Plate,Energy Abs P13
Abs,Front Energy P14
Guard,Front Bumper P15
Zoom
Adl Labor
Print
Setup
57
P6
P11
P14
P7
61
P3
P9
P15
P8
P2
P10
P5
P13
P4
P12
P1

FIG. 6B


107
Claims
Contents
Estimates
Reports
Notes
NET TOTAL
$2,668.75
Administrative
Vehicle ID
Damages
Rates
Supplement 1
Damage List
L/R
Operation
Price
Adj %
Hrs
Rate
Total
Open
Cover,Rear Vinyl
Reploce OEM
424.25
4.5
SM
424.25
Mldg,Roof Transverse
Reploce OEM
174.00
SM
174.00
Mldg,Quarter Belt
LT
Reploce OEM
224.50
0.3
SM
224.50
Left
Right
Both
Dril
In
Out
Sectn refinish
Strips & moldings
Vehicle Sections
Front End Panel And Lamps
Parts List
Grille Assembly P1
Applique,Grille P2
Emblem,Grille P3
Capsule Assembly,Otr P4
Capsule Assembly,Inr P5
Ring,Beam Ret Outer P6
Ring,Beam Ret Inner P7
Sealed Beam,Outer P8
Sealed Beam,Inner P9
Panel,Headlamp Mtg P10
Parklamp Assembly P11
Socket,Parklamp P12
Lamp,Side Marker P13
Socket,Frt Sd Marker P14
Grille Assembly P15
Filler,Front Panel P16
Zoom
Adl Labor
Print
Setup
57
61
P15
P1
P10
P13
P6
P8
P7
P9
P4
P5
P3
P2
P11
P12
P16
P14


108
Claims
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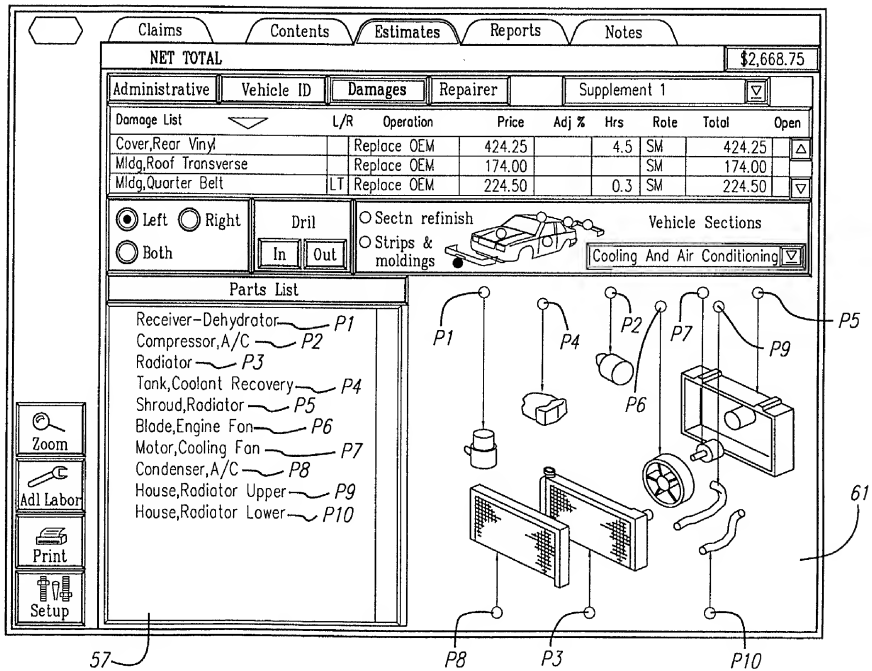
Estimates
Reports
Notes
NET TOTAL
$2,668.75
Administrative
Vehicle ID
Damages
Repairer
Supplement 1
Damage List
L/R
Operation
Price
Adj %
Hrs
Rate
Total
Open
Cover,Rear Vinyl
Replace OEM
424.25
4.5
SM
424.25
Mldg,Roof Transverse
Replace OEM
174.00
SM
174.00
Mldg,Quarter Belt
LT
Replace OEM
224.50
0.3
SM
224.50
Left
Right
Both
Dril
Out
In
Sectn refinish
Strips & moldings
Vehicle Sections
P14
Radiator Support
Parts List
Panel,Radiator Supt
P1
Crsmbr,Rod Pnl Lower
P2
Supt,Radiator Panel
P3
Baffle,Radiator Panel
P4
Baffle,Radiator Panel
P5
Panel,Upper Rad Mtg
P6
Brace,Radiator Panel
P7
Brace,Radiator Panel
P8
Brkt,Rad Supt Lower
P9
Tray,Battery
P10
Seal,Rad Mounting Pnl
P11
Seal,Rad Mounting Pnl
P12
Seal,Rad Mounting Pnl
P13
Seal,Rad Mounting Pnl
P14
Shield,Heat
P15
Horn,High Note
P16
Zoom
Adl Labor
Print
Setup
57
61
P10
P6
P15
P11
P13
P12
P5
P1
P16
P7
P4
P3
P8
P2
P9

FIG. 6C

FIG. 6D


109
Claims
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Estimates
Reports
Notes
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Administrative
Vehicle ID
Damages
Repairer
Supplement 1
Damage List
L/R
Operation
Price
Adj %
Hrs
Role
Total
Open
Cover,Rear Vinyl
Replace OEM
424.25
4.5
SM
424.25
Mldg,Roof Transverse
Replace OEM
174.00
SM
174.00
Mldg,Quarter Belt
LT
Replace OEM
224.50
0.3
SM
224.50
Left
Right
Both
Dril
In
Out
Sectn refinish
Strips & moldings
Vehicle Sections
Cooling And Air Conditioning
Parts List
Receiver-Dehydrator P1
Compressor,A/C P2
Radiator P3
Tank,Coolant Recovery P4
Shroud,Radiator P5
Blade,Engine Fan P6
Motor,Cooling Fan P7
Condenser,A/C P8
House,Radiator Upper P9
House,Radiator Lower P10
Zoom
Adl Labor
Print
Setup
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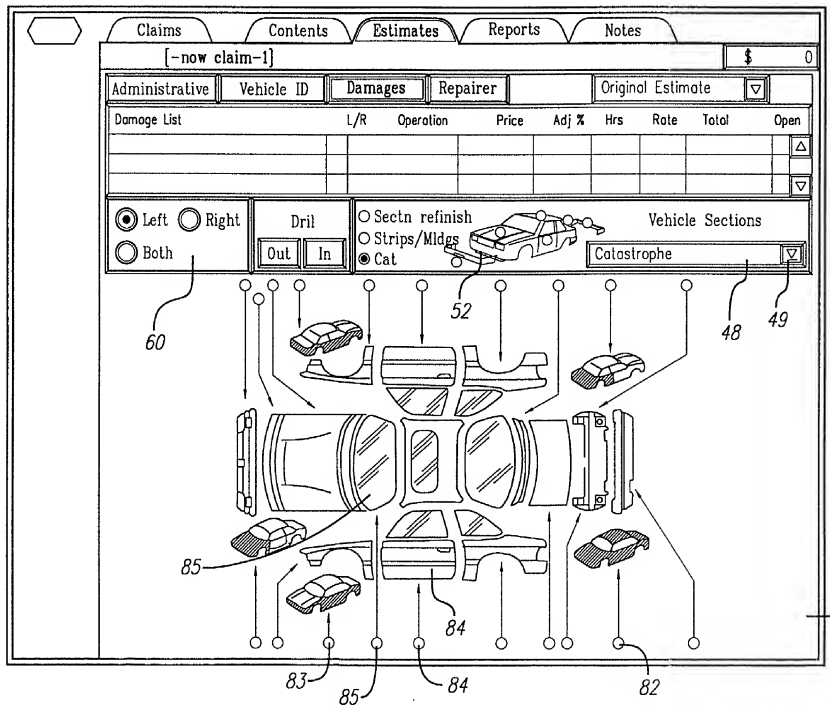
61
P1
P2
P3
P4
P5
P6
P7
P8
P9
P10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Estimates
Reports
Notes
[-now claim-1]
$ 0
Administrative
Vehicle ID
Damages
Repairer
Original Estimate
Damage List
L/R
Operation
Price
Adj %
Hrs
Rate
Total
Open
Left
Right
Both
Dril
Out
In
Sectn refinish
Strips/Mldgs
Cat
Vehicle Sections
Catastrophe
63
60
52
48
49
85
84
61
83
85
84
82

FIG. 7

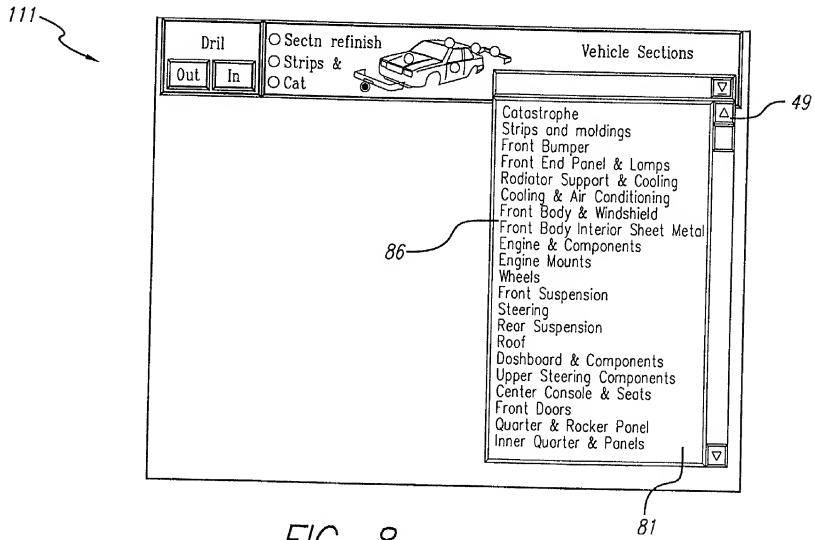

111
Dril
Out
In
Sectn refinish
Strips &
Cat
Vehicle Sections
49
Catastrophe
Strips and moldings
Front Bumper
Front End Panel & Lamps
Radiator Support & Cooling
Cooling & Air Conditioning
Front Body & Windshield
Front Body Interior Sheet Metal
Engine & Components
Engine Mounts
Wheels
Front Suspension
Steering
Rear Suspension
Roof
Doshboard & Components
Upper Steering Components
Center Console & Seats
Front Doors
Quarter & Rocker Panel
Inner Quarter & Panels
86
81

FIG. 8

FIG. 9–1

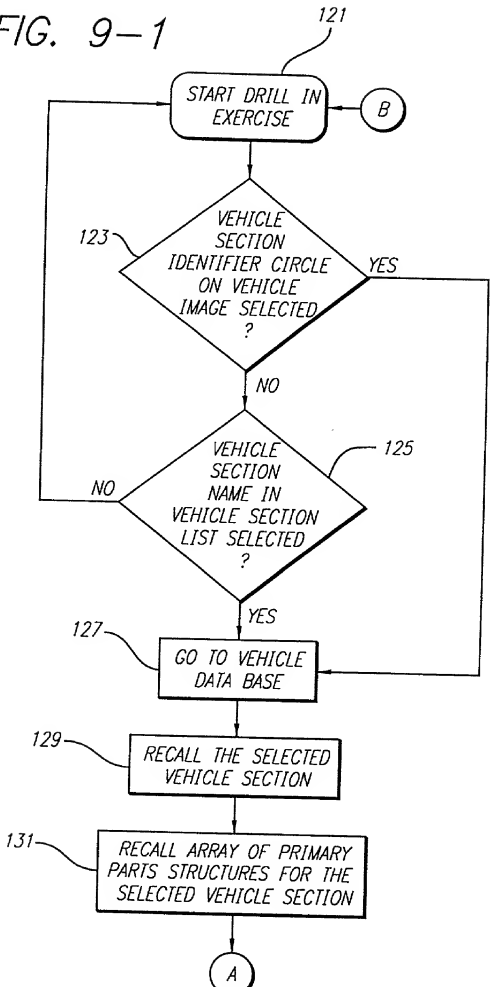
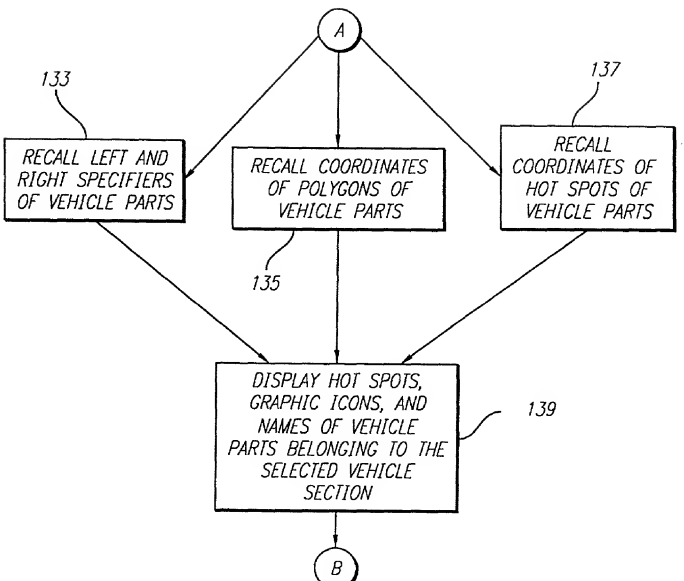

121
START DRILL IN EXERCISE
B
123
VEHICLE SECTION IDENTIFIER CIRCLE ON VEHICLE IMAGE SELECTED ?
YES
NO
125
VEHICLE SECTION NAME IN VEHICLE SECTION LIST SELECTED ?
NO
YES
127
GO TO VEHICLE DATA BASE
129
RECALL THE SELECTED VEHICLE SECTION
131
RECALL ARRAY OF PRIMARY PARTS STRUCTURES FOR THE SELECTED VEHICLE SECTION
A

FIG. 9–2


A
133
RECALL LEFT AND RIGHT SPECIFIERS OF VEHICLE PARTS
RECALL COORDINATES OF POLYGONS OF VEHICLE PARTS
135
137
RECALL COORDINATES OF HOT SPOTS OF VEHICLE PARTS
DISPLAY HOT SPOTS, GRAPHIC ICONS, AND NAMES OF VEHICLE PARTS BELONGING TO THE SELECTED VEHICLE SECTION
139
B

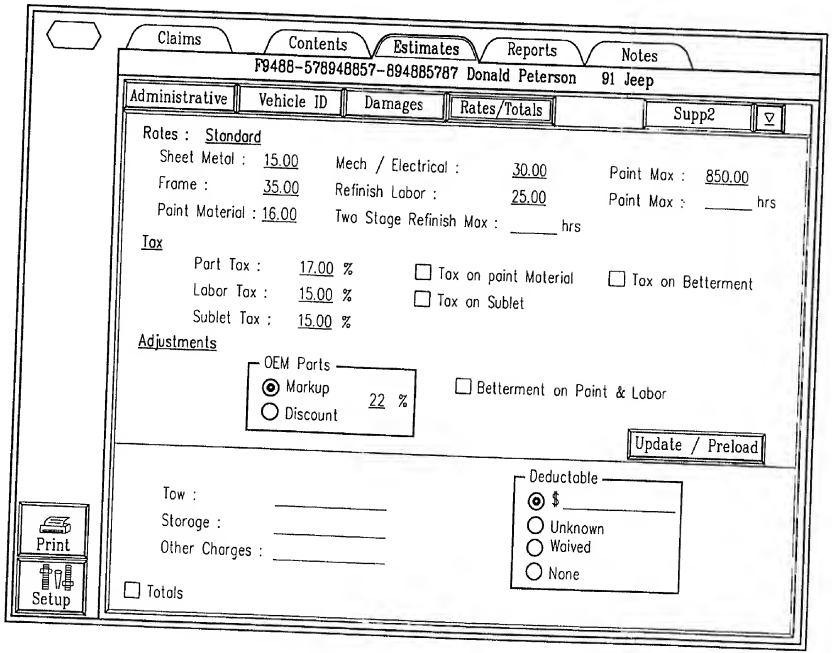

Claims
Contents
Estimates
Reports
Notes
F9488-578948857-894885787 Donald Peterson 91 Jeep
Administrative
Vehicle ID
Damages
Rates/Totals
Supp2
Rates : Standard
Sheet Metal : 15.00
Frame : 35.00
Paint Material : 16.00
Mech / Electrical : 30.00
Refinish Labor : 25.00
Two Stage Refinish Max : hrs
Paint Max : 850.00
Paint Max : hrs
Tax
Part Tax : 17.00 %
Labor Tax : 15.00 %
Sublet Tax : 15.00 %
Tax on paint Material
Tax on Sublet
Tax on Betterment
Adjustments
OEM Parts
Markup 22 %
Discount
Betterment on Paint & Labor
Update / Preload
Tow :
Storage :
Other Charges :
Deductable
$
Unknown
Waived
None
Totals
Print
Setup

FIG. 10A

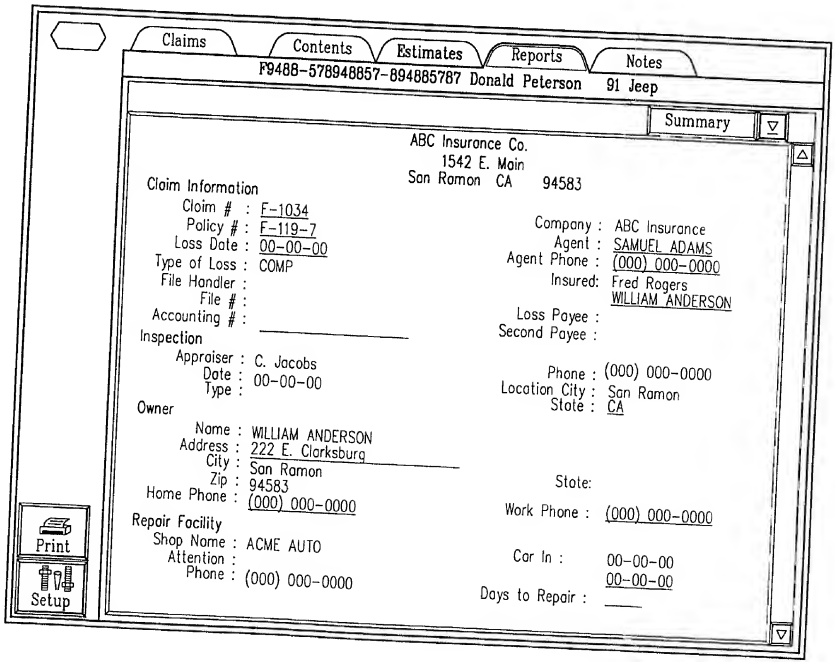

Claims
Contents
Estimates
Reports
Notes
F9488-578948857-894885787 Donald Peterson 91 Jeep
Summary
ABC Insurance Co.
1542 E. Main
San Ramon CA 94583
Claim Information
Claim # : F-1034
Policy # : F-119-7
Loss Date : 00-00-00
Type of Loss : COMP
File Handler :
File # :
Accounting # :
Inspection
Appraiser : C. Jacobs
Date : 00-00-00
Type :
Owner
Name : WILLIAM ANDERSON
Address : 222 E. Clarksburg
City : San Ramon
Zip : 94583
Home Phone : (000) 000-0000
Repair Facility
Shop Name : ACME AUTO
Attention :
Phone : (000) 000-0000
Company : ABC Insurance
Agent : SAMUEL ADAMS
Agent Phone : (000) 000-0000
Insured: Fred Rogers
WILLIAM ANDERSON
Loss Payee :
Second Payee :
Phone : (000) 000-0000
Location City : San Ramon
State : CA
State:
Work Phone : (000) 000-0000
Car In : 00-00-00
00-00-00
Days to Repair :
Print
Setup

FIG. 10B

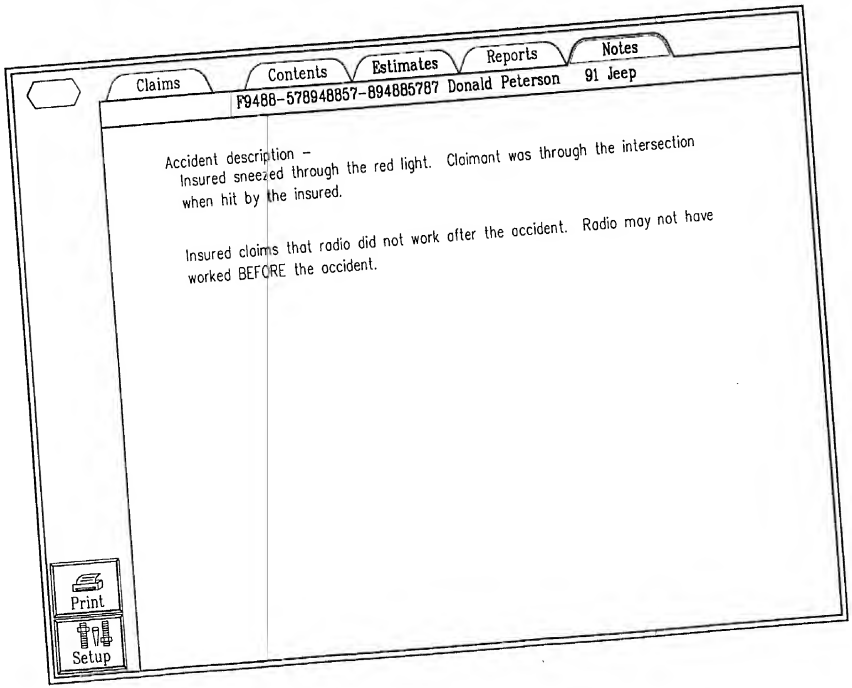

Claims
Contents
Estimates
Reports
Notes
F9488-578948857-8948865787 Donald Peterson 91 Jeep
Accident description -
Insured sneezed through the red light. Claimant was through the intersection when hit by the insured.
Insured claims that radio did not work after the accident. Radio may not have worked BEFORE the occident.
Print
Setup

FIG. 10C

Our Ref.: 10005.914

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

INSRUANCE ESTIMATING SYSTEM

the specification of which

_X_ is attached hereto.
_____ was filed on _____ as
Application Serial No. _____
and was amended on _____.
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I do not know and do not believe that the same was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months prior to this application.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, Section 1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119, of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)			Priority Claimed	
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status -- patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status -- patented, pending, abandoned)

I hereby appoint HECKER & HARRIMAN, a firm including: Gary A. Hecker, Reg. No. 31,023; J. D. Harriman II, Reg. No. 31,967; and Christopher A. Mathews, Reg. No. 35,944 with offices located at 2029 Century Park East, Suite 1600 Los Angeles, California 90067, telephone (310) 286-0377, my attorneys with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected herewith.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilfull false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Joint Inventor JAMES SCHREITMUELLER

Inventor's Signature _____ Date 12/17/97

Residence 6106 LAKEVIEW CIRCLE Citizenship U.S.A.
SAN RAMON, CA 94583
(City, State) (Country)

Post Office Address 6106 LAKEVIEW CIRCLE
SAN RAMON, CA 94583

Full Name of Joint Inventor GERHARD BLENDSTRUP

Inventor's Signature _____ Date _____

Residence _____ Citizenship U.S.A.
(City, State) (Country)

Post Office Address _____

Full Name of Joint Inventor NASSER SHARIATPANAHY

Inventor's Signature _____ Date _____

Residence 30 RAINBOW CIRCLE Citizenship IRAN
DANVILLE, CA 94506
(City, State) (Country)

Post Office Address 30 RAINBOW CIRCLE
DANVILLE, CA 94506

CERTIFICATE OF MAILING

This is to certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as Express Mail Label No. EL214414127US *in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on:*

November 17, 1998

Signature *Date* 11/17/98

Mario Federis

Our Ref.: 10005.914

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

INSRUANCE ESTIMATING SYSTEM

the specification of which

_____ is attached hereto.
_X_ was filed on December 28, 1994 as
Application Serial No. 08/365,520
and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I do not know and do not believe that the same was ever known or used in the United States of America before my invention thereof, or patented or described in any printed publication in any country before my invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, and that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representatives or assigns more than twelve months prior to this application.

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(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

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(Application Serial No.)	(Filing Date)	(Status -- patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status -- patented, pending, abandoned)

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilfull false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Joint Inventor JIM SCHREITMULLER

Inventor's Signature _____ Date _____

Residence 6106 LAKEVIEW CIRCLE Citizenship U.S.A.
SAN RAMON, CA 94583
(City, State) (Country)

Post Office Address 6106 LAKEVIEW CIRCLE
SAN RAMON, CA 94583

Full Name of Joint Inventor GERHARD BLENDSTRUP

Inventor's Signature Gerhard Blendstrup Date 12-22-94

Residence 6 WHITE PINE LANE Citizenship U.S.A.
LAFAYETTE CA 94549
(City, State) (Country)

Post Office Address 6 WHITE PINE LANE
LAFAYETTE, CA 94549

Full Name of Joint Inventor NASSER SHARIATPANAHY

Inventor's Signature _____ Date _____

Residence 30 RAINBOW CIRCLE Citizenship IRAN
DANVILLE, CA 94506
(City, State) (Country)

Post Office Address 30 RAINBOW CIRCLE
DANVILLE, CA 94506

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November 17, 1998

Signature Mario Federis *Date* 11/17/98

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, D.C. 20231, on February 3, 1995

Signature Reg. No. Date 2/3/95

Our Ref.: 10005.914

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below, next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

INSRUANCE ESTIMATING SYSTEM

the specification of which

_X_ is attached hereto.
_____ was filed on _____ as
Application Serial No. _____
and was amended on _____.
(if applicable)

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(Number)	(Country)	(Day/Month/Year Filed)	Yes	No
(Number)	(Country)	(Day/Month/Year Filed)	Yes	No

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(Application Serial No.)	(Filing Date)	(Status -- patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status -- patented, pending, abandoned)

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such wilfull false statements may jeopardize the validity of the application or any patent issued thereon.

Full Name of Joint Inventor JIM SCHREITMULLER

Inventor's Signature _____ Date _____

Residence 6106 LAKEVIEW CIRCLE Citizenship U.S.A.
SAN RAMON, CA 94583
(City, State) (Country)

Post Office Address 6106 LAKEVIEW CIRCLE
SAN RAMON, CA 94583

Full Name of Joint Inventor GERHARD BLENDSTRUP

Inventor's Signature _____ Date _____

Residence _____ Citizenship U.S.A.
(City, State) (Country)

Post Office Address _____

Full Name of Joint Inventor NASSER SHARIATPANAHY

Inventor's Signature Nasser Shariatpanahy Date 12/27/94
Residence 30 RAINBOW CIRCLE Citizenship IRAN
DANVILLE, CA 94506
(City, State) (Country)

Post Office Address 30 RAINBOW CIRCLE
DANVILLE, CA 94506

CERTIFICATE OF MAILING

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November 17, 1998

Signature Mario Federis *Date* 11/17/98

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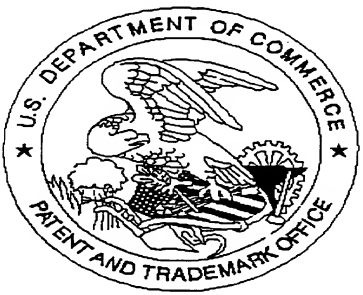

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